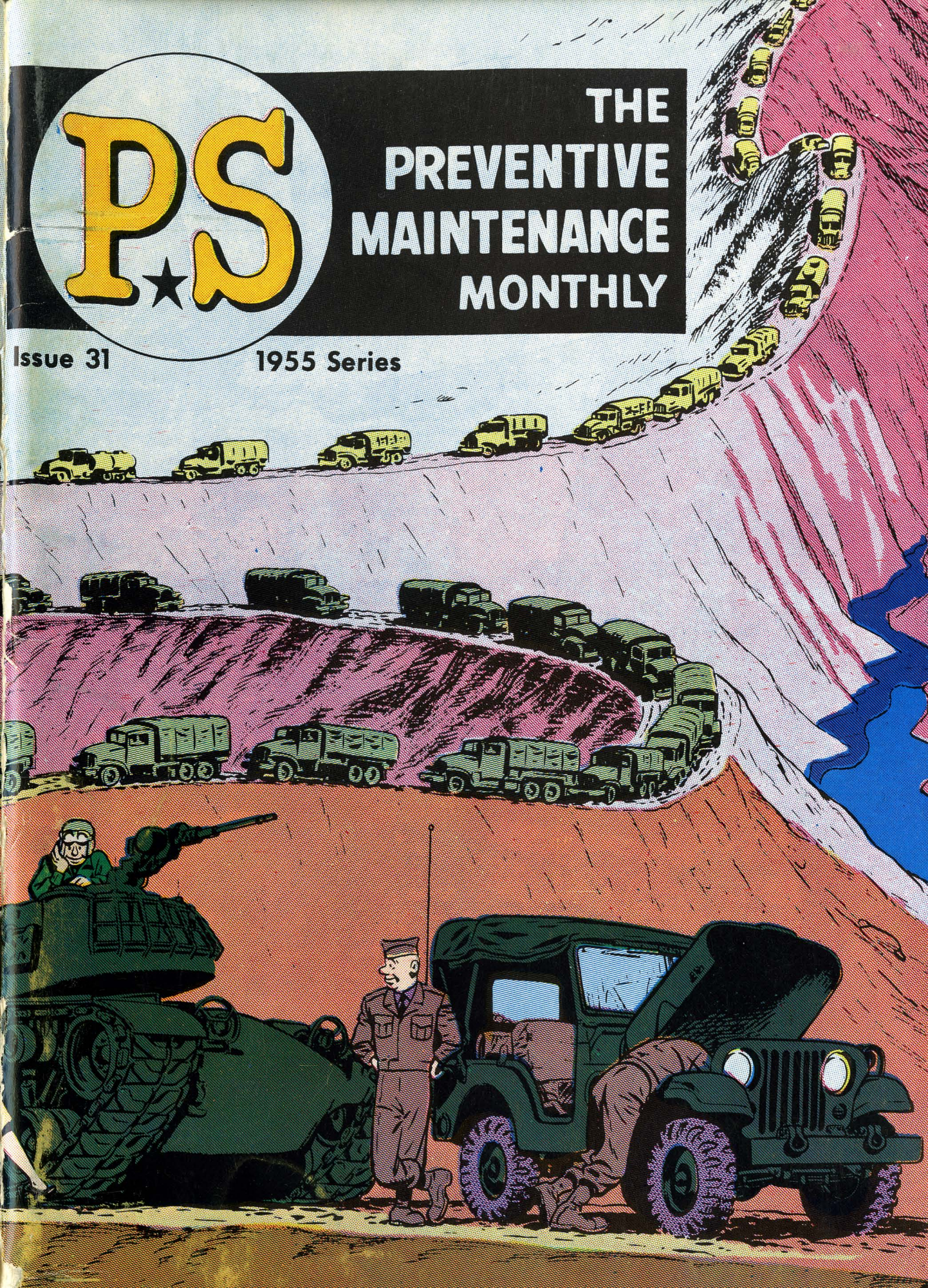
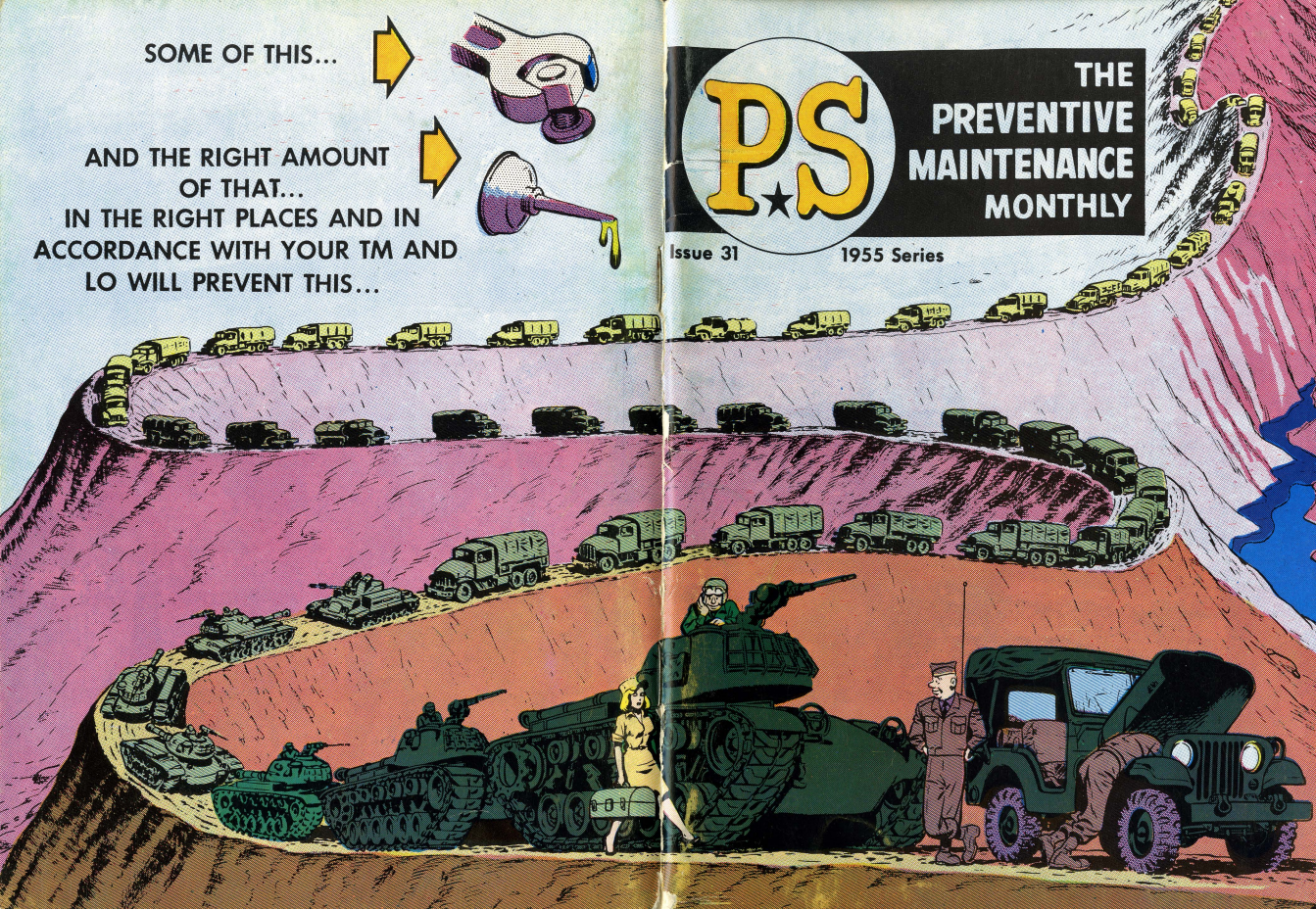
P.S

THE PREVENTIVE MAINTENANCE MONTHLY

Issue 31 1955 Series





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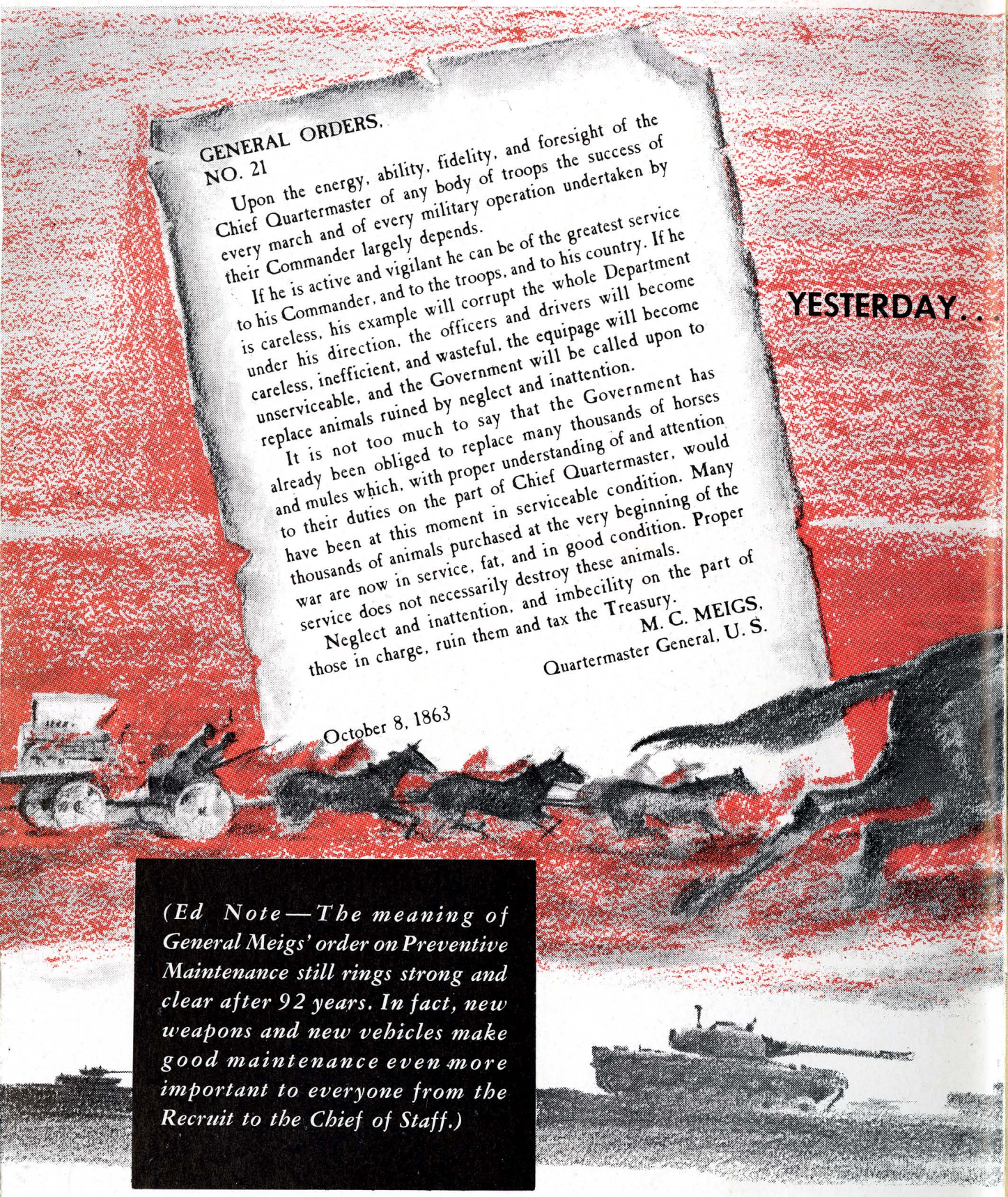


GENERAL ORDERS,
NO. 21

Upon the energy, ability, fidelity, and foresight of the Chief Quartermaster of any body of troops the success of every march and of every military operation undertaken by their Commander largely depends.

If he is active and vigilant he can be of the greatest service to his Commander, and to the troops, and to his country. If he is careless, his example will corrupt the whole Department under his direction, the officers and drivers will become careless, inefficient, and wasteful, the equipage will become unserviceable, and the Government will be called upon to replace animals ruined by neglect and inattention.

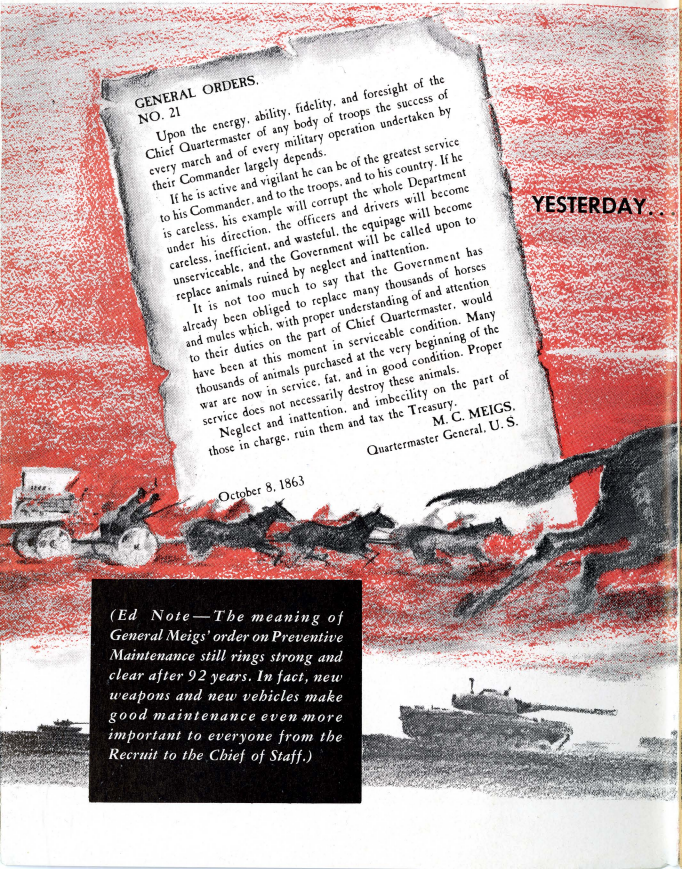
It is not too much to say that the Government has already been obliged to replace many thousands of horses and mules which, with proper understanding of and attention to their duties on the part of Chief Quartermaster, would have been at this moment in serviceable condition. Many thousands of animals purchased at the very beginning of the war are now in service, fat, and in good condition. Proper service does not necessarily destroy these animals.

Neglect and inattention, and imbecility on the part of those in charge, ruin them and tax the Treasury.

M. C. MEIGS,
Quartermaster General, U. S.

October 8, 1863

(Ed Note—The meaning of General Meigs' order on Preventive Maintenance still rings strong and clear after 92 years. In fact, new weapons and new vehicles make good maintenance even more important to everyone from the Recruit to the Chief of Staff.)



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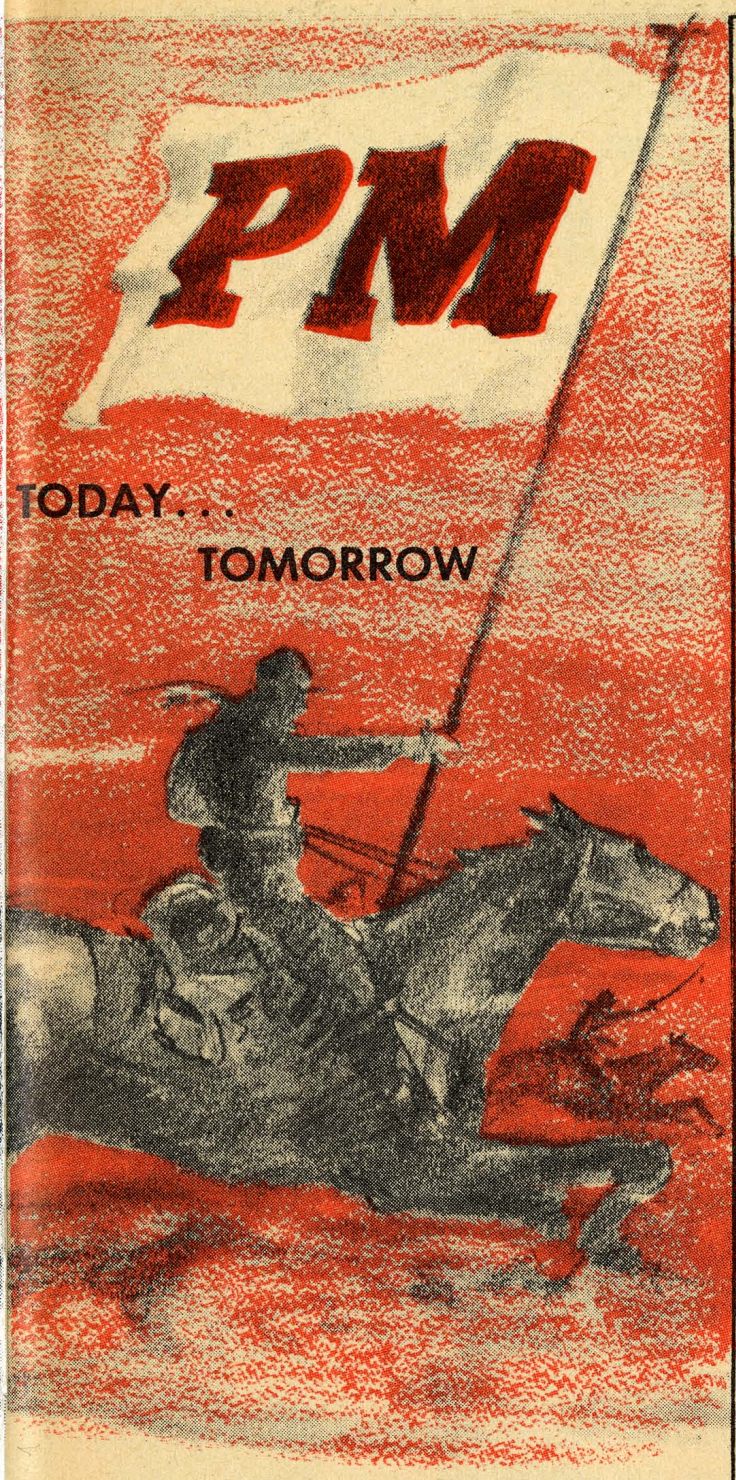

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Some Light On Working Your Truck's Switch To...

SEE AND SIGNAL

So it isn't a one-two operation—but the light-switch on your truck's dash-panel's got reasons. Not only does the one unit control all lights, but it also packs insurance against accidents.

That part's in the mechanical lock switch at the lower right. Unless you flip that lever to unlock it, you shouldn't be able to move the main switch at the top to BO DRIVE, STOP LIGHT, or SERVICE DRIVE.

No tell-tale lights unless you want 'em is a swell guarantee. 'Specially when there're enemy planes nosing for you and your convoy. Switching on the wrong lights then—even for a second—can dim your future.

Handle with care—and know what does which. Or you may break the lock lever, canceling out your and your pals' insurance.

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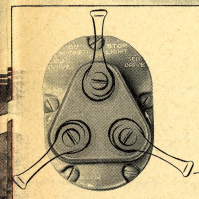
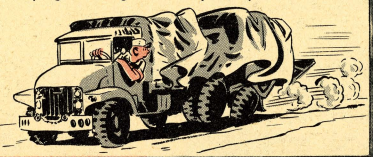
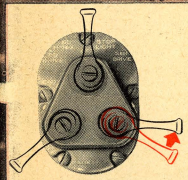
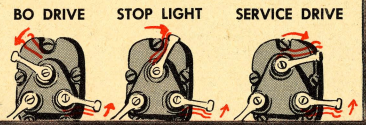


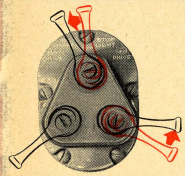
Everything's off. Riding around this way even your stop light won't go on when you step on the brake.



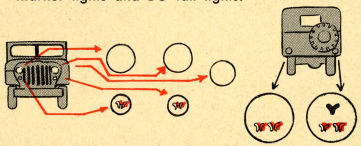


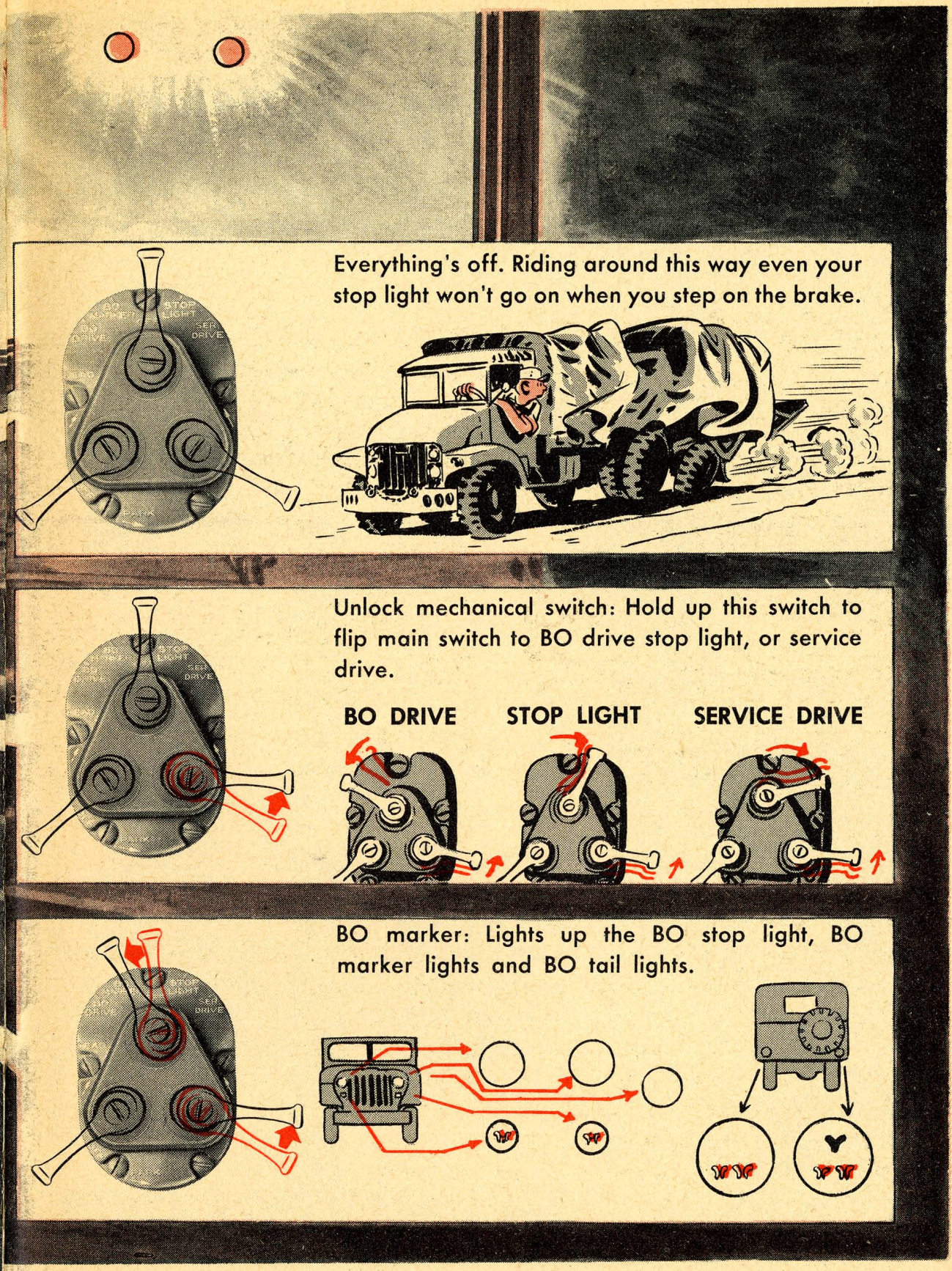
Unlock mechanical switch: Hold up this switch to flip main switch to BO drive stop light, or service drive.





BO marker: Lights up the BO stop light, BO marker lights and BO tail lights.





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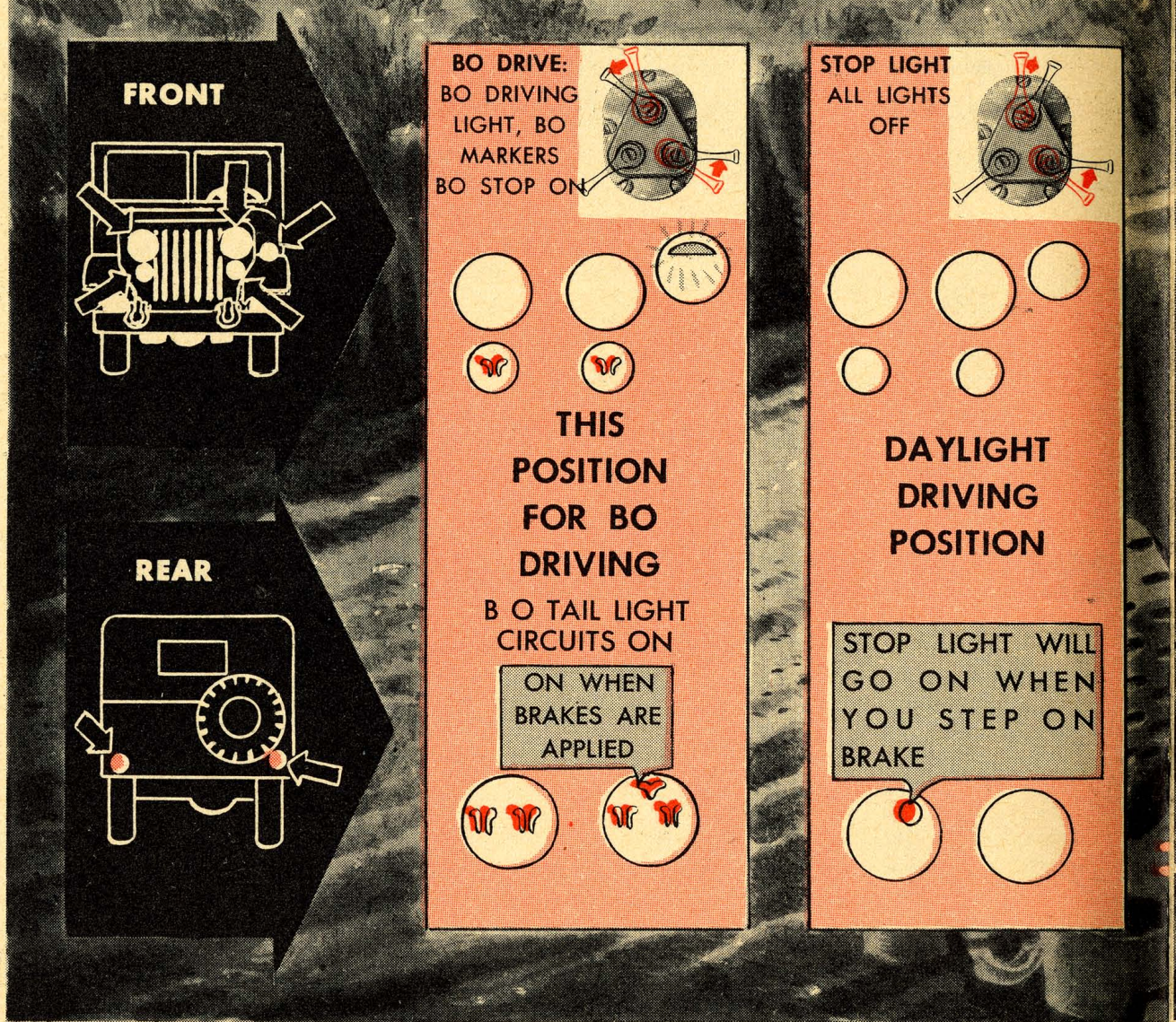
Unlock mechanical switch: Hold up this switch to flip main switch to BO drive stop light, or service drive.

BO DRIVE **STOP LIGHT** **SERVICE DRIVE**

BO marker: Lights up the BO stop light, BO marker lights and BO tail lights.

(Notice that each tail light has two pairs of "cat's eyes." When you're driving behind another vehicle in the dark, and each tail light appears to have only one point of light—you're at least 180 feet away. If you see two points of light in each tail light—you're 60 to 180 feet away. But if you can see each of the four cat's eyes in each light, you're driving less than 60 feet away—you're too close for safety.

The BO marker lights in front and BO stop light at the rear, each have one pair of cat's eyes. Again, if you can see each eye, you know you're less than 60 feet away.)



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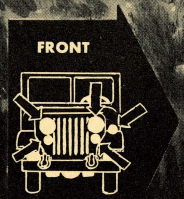
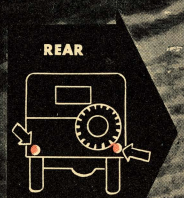
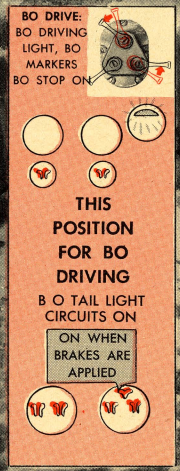
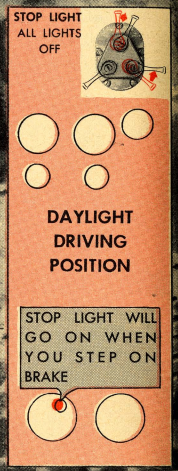
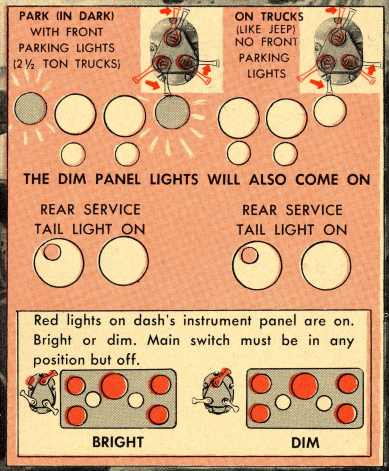
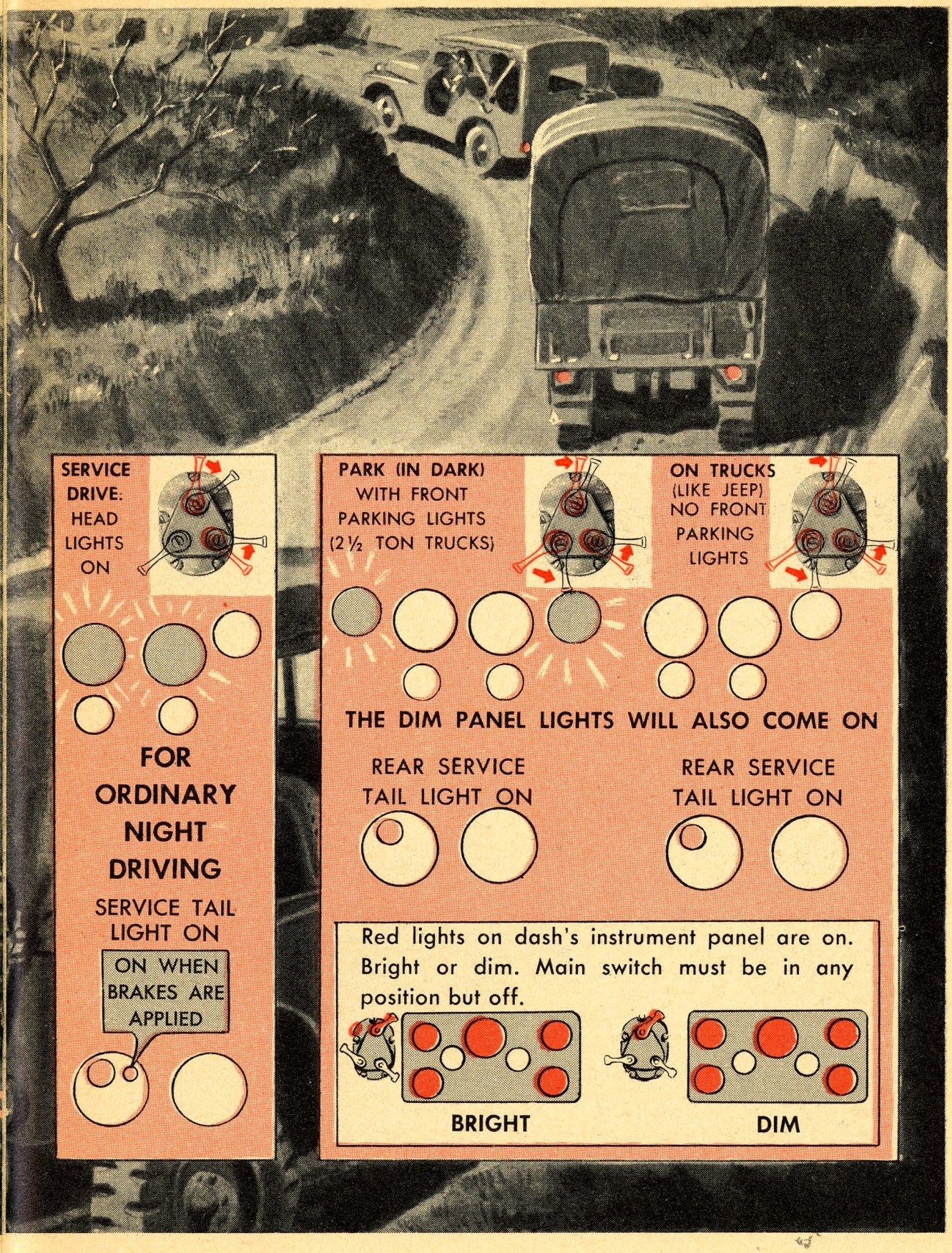












SERVICE DRIVE: HEAD LIGHTS ON

FOR ORDINARY NIGHT DRIVING

SERVICE TAIL LIGHT ON

ON WHEN BRAKES ARE APPLIED

PARK (IN DARK) WITH FRONT PARKING LIGHTS (2½ TON TRUCKS)

ON TRUCKS (LIKE JEEP) NO FRONT PARKING LIGHTS

THE DIM PANEL LIGHTS WILL ALSO COME ON

REAR SERVICE TAIL LIGHT ON

REAR SERVICE TAIL LIGHT ON

Red lights on dash's instrument panel are on. Bright or dim. Main switch must be in any position but off.

BRIGHT

DIM

CAREFUL THEY'LL BURN

TANK BATTERY REMOVAL

When taking batteries out of your M46, M47 and M41 tanks, you've gotta be mighty careful. If sparks are set off when you're taking the batteries out, you can start a fire with all that gasoline in the neighborhood.

First, be sure you have all switches off. Then remove the battery cover, making sure you don't ground the cover to the battery terminals or to exposed parts of the cables.

Next, unhook the ground cable from the battery terminal. After that, take off the positive cable, remove the cable connecting the two batteries, and take out your batteries.

Follow this system and you'll prevent those sparks in the engine compartment—sparks that'll set off gasoline and maybe burn up your tank.

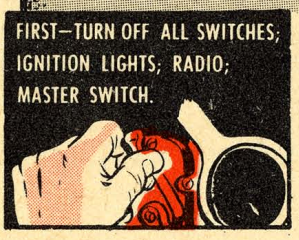
You light tank people (M41, M41A1 and M42) can get your jobs fixed up so you'll have no sparking trouble. Take a gander at MWO Ord G1-W57. It replaces old-style battery covers and gives you a new kind of clamp to prevent those dangerous sparks.

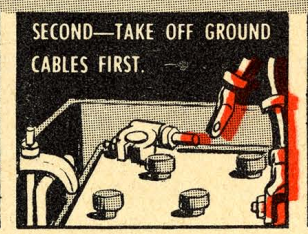
TRUCK BATTERY REMOVAL

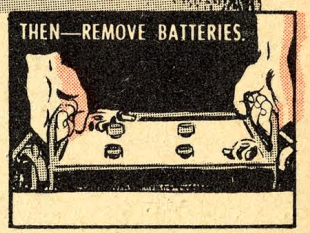
Believe it or not, there's a right and a wrong way to take out your truck batteries. Doing it wrong, particularly with the batteries under the frame like in the M34 and M51 trucks, could result in some battery explosions.

You see, there's always some hydrogen gas floating around your batteries, and it only takes a little spark to set it off. Which spark you can cause very easily while unbolting the terminals.

So here's the safe way to take the batteries out of *any* vehicle:







As you can see, by doing it this way you never unbolt a live circuit. If you hit your wrench against a grounded part of the truck while unbolting the ground cables, no sweat—they're grounded anyway. Then, since the switches are all off, you get no spark when you take off the ground cable from the battery post. And after that, if you hit your wrench against the truck while taking off the positive cables, the battery is not grounded, so still no spark.

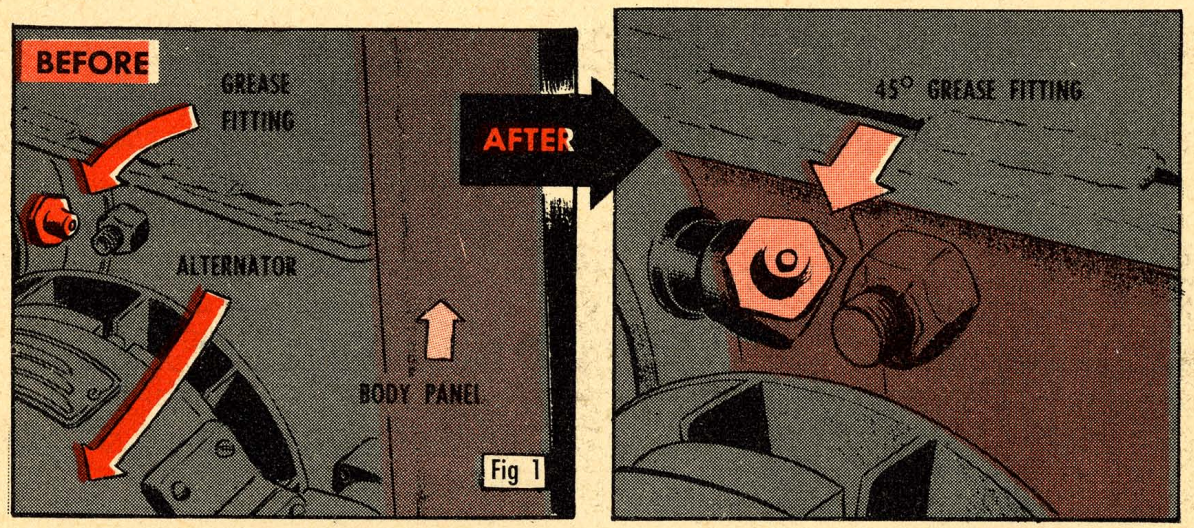
It's simple—just take 'em out by the numbers and you'll have no trouble.

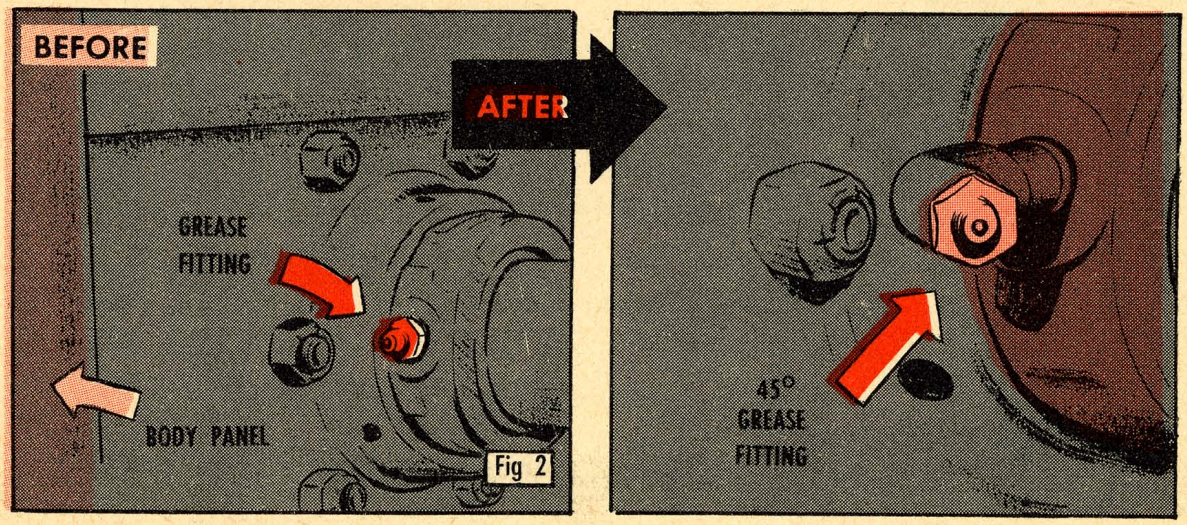
SOMETHING TO SHOOT AT

A grease gun's a straight shooter. But unless its target's straight ahead, it'll never make bull's-eye.

That's why some guys aren't hitting the mark on their M59 personnel-carrier prop-shafts' support-bearings. The grease fittings on both shafts are hard to get at. The one on the left shaft's blocked by the alternator and body panel. (Fig. 1). And a body panel runs interference for the right shaft's fitting, too (Fig. 2).

But, no need to give up. Instead, exchange the straight grease fittings for 45° angle jobs. Headed your way, they're bull's-eyes for a grease job.





WANNA SEE IF YOU'RE A *GOOD* DRIVER,

If there's a doubt in your mind as to which you are, go down the list and mark the column and see how you make out.

If you've got all your check marks in the "Always" column, you're on your way to a Good Driver's Award. But if you've got several check marks in the "Sometimes" column, brother, you've got one foot in a 6-foot hole. And if you have a couple in the "Never" column—fall over, you must be dead by now.

	Never	Sometimes	Always
1. Looks over vehicle before starting. Tries horn, light, and windshield wipers.	☐	☐	☐
2. Makes sure the oil and water are at proper levels and that battery has enough water (does this daily).	☐	☐	☐
3. Keeps vehicle clean and lubricated.	☐	☐	☐
4. Warms up engine before moving (at fast idle).	☐	☐	☐
5. Is sure that all this is aboard—road map, trip ticket, spare tire, tools, necessary blank forms.	☐	☐	☐
6. Shifts gears in time to keep vehicle from losing speed.	☐	☐	☐
7. Keeps "box-cars" off the clutch except when shifting gears and stopping.	☐	☐	☐
8. Answered all statements truthfully? (So far)	☐	☐	☐
9. Gives clear signals when turning or stopping.	☐	☐	☐

WANNA SEE IF YOU'RE A *GOOD* DRIVER, A GOOF-OFF? OR WHAT???

If there's a doubt in your mind as to which you are, go down the list and mark the column and see how you make out.

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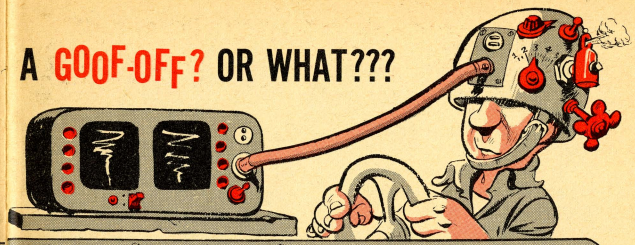

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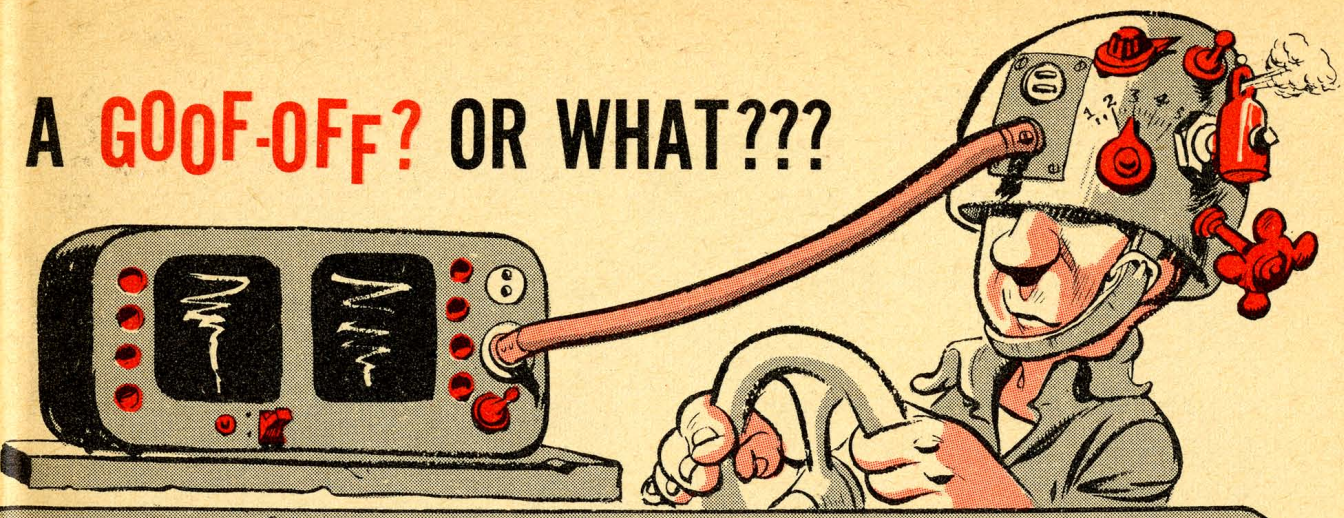
8. Answered all statements truthfully? (So far)	☐	☐	☐
9. Gives clear signals when turning or stopping.	☐	☐	☐

	Never	Sometimes	Always
10. Shows respect for all rules of the highway. This includes: traffic lights, traffic police, military police, signs.	☐	☐	☐
11. Heeds the following traffic signs: a. ■ b. ◆ c. ⬢ d. ● (If you don't know them and you're still alive, see next page.)	☐	☐	☐
12. When driving keeps eyes on the **right** curves.	☐	☐	☐
13. Keeps speed within speed limits.	☐	☐	☐
14. Drives slower in bad weather.	☐	☐	☐
15. Keeps trip ticket in top shape.	☐	☐	☐
16. Does necessary "After Operations" maintenance.	☐	☐	☐
17. Treats the vehicle like it's his own.	☐	☐	☐

A GOOF-OFF? OR WHAT???



	Never	Sometimes	Always
10. Shows respect for all rules of the highway. This includes: traffic lights, traffic police, military police, signs.	☐	☐	☐
11. Heeds the following traffic signs: a. ■ b. ◆ c. ⬢ d. ● (If you don't know them and you're still alive, see next page.)	☐	☐	☐
12. When driving keeps eyes on the **right** curves.	☐	☐	☐
13. Keeps speed within speed limits.	☐	☐	☐
14. Drives slower in bad weather.	☐	☐	☐
15. Keeps trip ticket in top shape.	☐	☐	☐
16. Does necessary "After Operations" maintenance.	☐	☐	☐
17. Treats the vehicle like it's his own.	☐	☐	☐

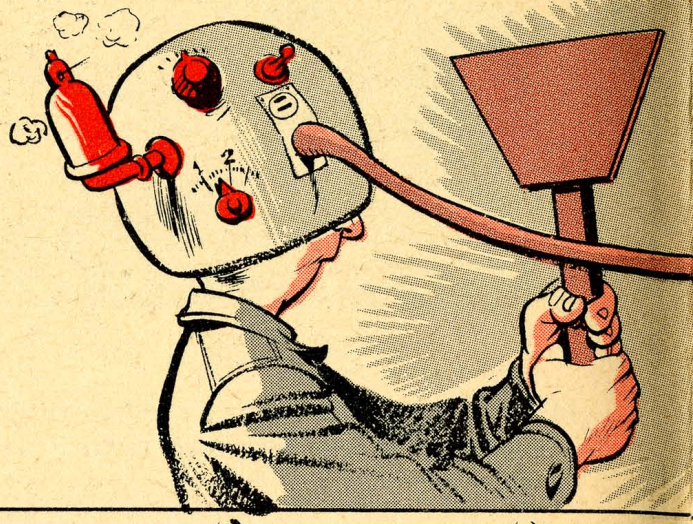
Naturally You've

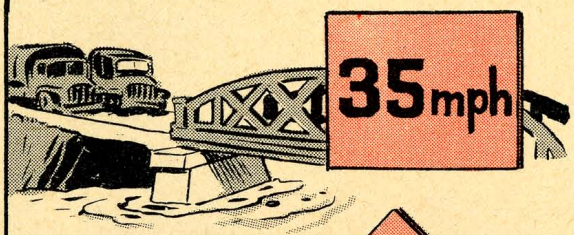
GOT AN EYE FOR A SHAPE?

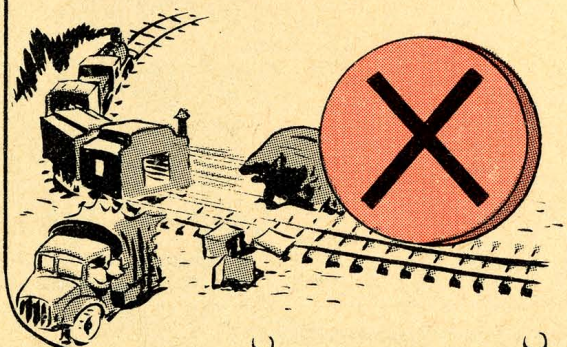
Easy now—it's the shape of a road sign.

If you just catch a quick flash of a road sign outta the corner of your eye, you can still get a good idea of what's coming if you know the standard shapes and what they mean. You know how it is—shape tells most of the story.

Here's the tale—if you're driving stateside—different lands have different signs.







Square or rectangular signs are information, such as speed limits, no passing zone, maximum bridge weights and so on. **Read and heed.**

Any diamond shaped sign always means **Slow Down.** These are the ones which have the arrows telling you about curves, sharp turns, winding road and other dangerous conditions ahead. Chop your throttle when you see this one.

The octagonal sign is only used for **Stop** signs. They aren't kiddin'—do it.

A round sign with an **X** across it means a railroad crossing. Busses, oil

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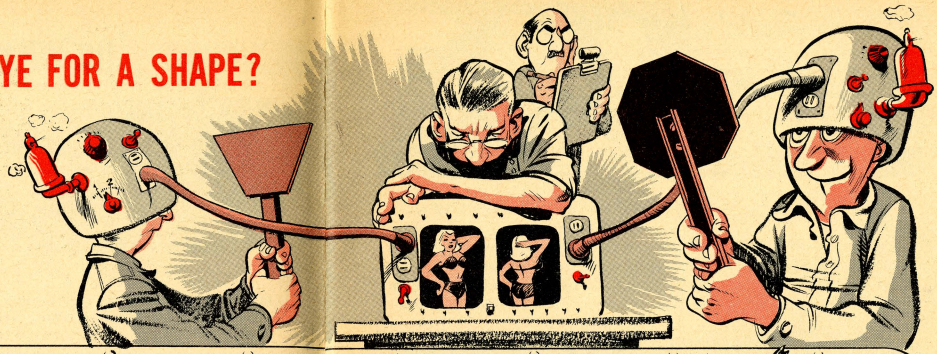

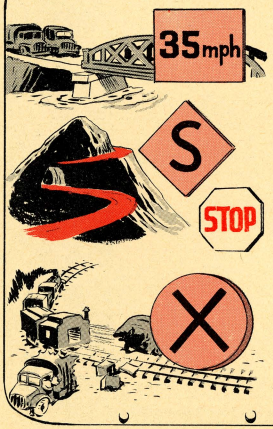

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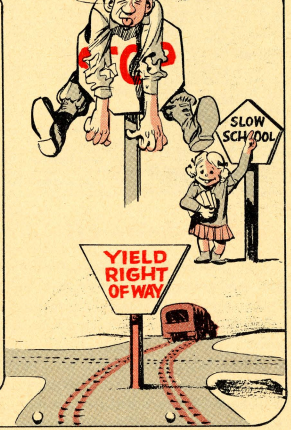
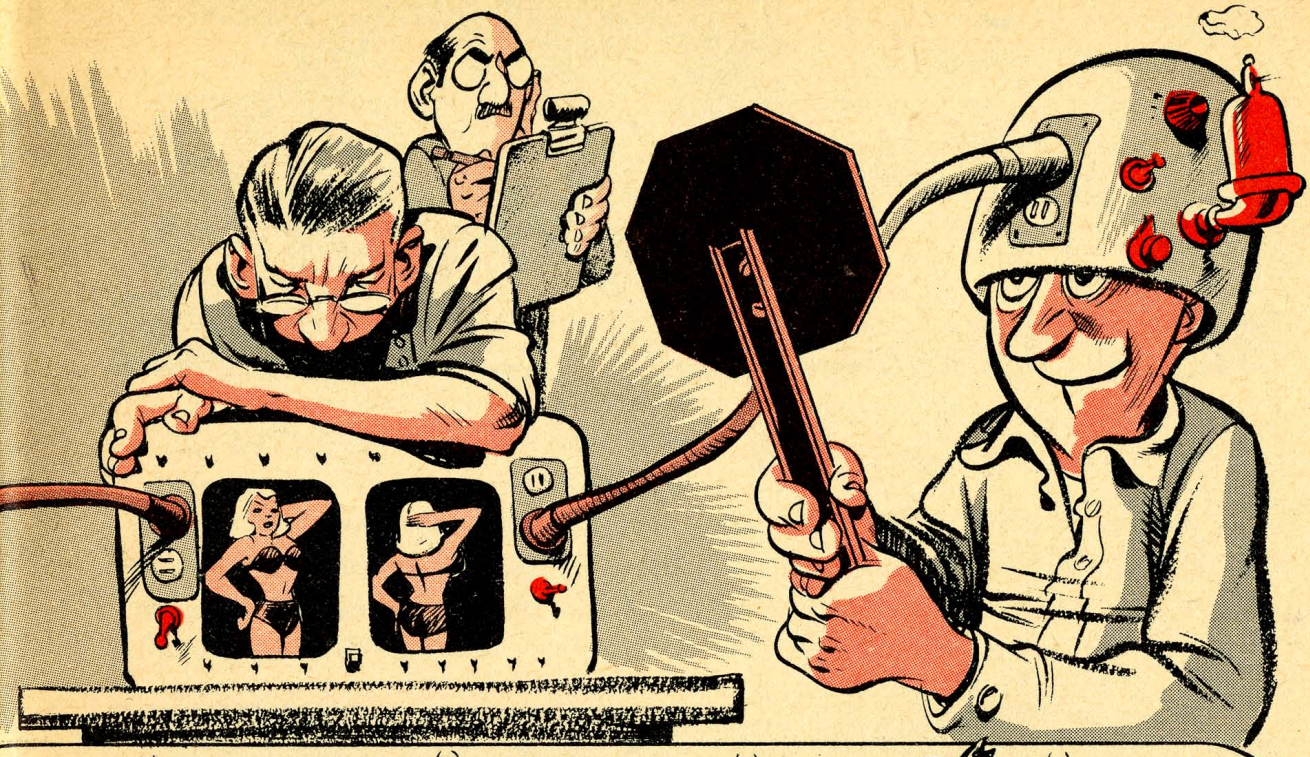
A pentagon shape is being used in some places to indicate school crossings. Watch for this one, it's new.

And there's another new one which may save us lots of grief. Shaped like an upside-down triangle with the tip chopped off, it says **Yield Right of Way.** This sign is being used to replace **Stop** signs on lots of traffic circles and lonely roads. It means you don't have to come to a dead stop, but you gotta give way.





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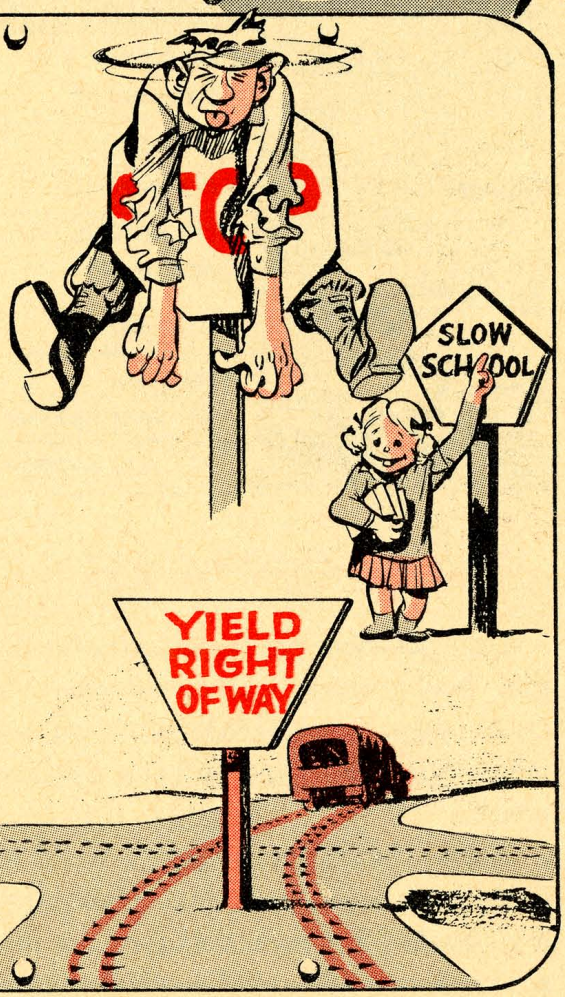
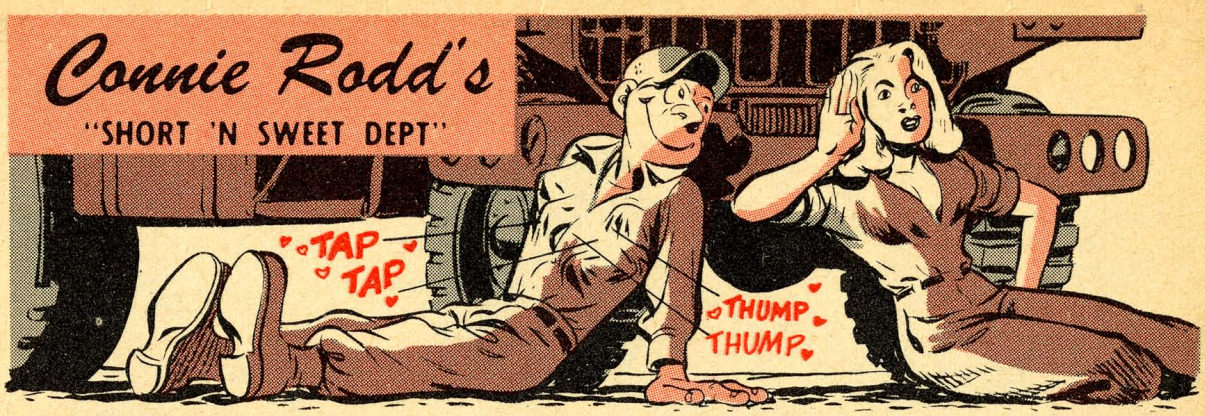


Connie Rodd's

"SHORT 'N SWEET DEPT"



Tappet tune

When your truck's tappet valves go tap-tap-tap, it's time for an adjustment. 'Cause like your own ticker—something's wrong when it's off-beat. But with a vehicle, you—the mechanic— are the doctor.

So's there's no misunderstanding, here are the clearances those valves need. The cold check is used only to get the engine running—like in rebuild.

	Hot Check		Cold Check	
	Intake	Exhaust	Intake	Exhaust
1/4-ton truck, M38 series	0.016	0.016	0.016	0.016
3/4-ton truck, M37 series	0.010	0.014	0.010	0.015
2-1/2-ton truck, M34 series	0.015	0.015	0.020	0.020
M135 series	0.012	0.020	0.012	0.020
5-ton truck, M41 series (camshaft 7376318)	0.020	0.024	0.023	0.023
M41 series (camshaft 8327327)	0.018	0.024	0.023	0.023

Pressurized gas

Let's get them gas tanks outta the hot sun. And you can't always do that. So to be sure, better backtrack and unscrew that gas cap back to the first notch.

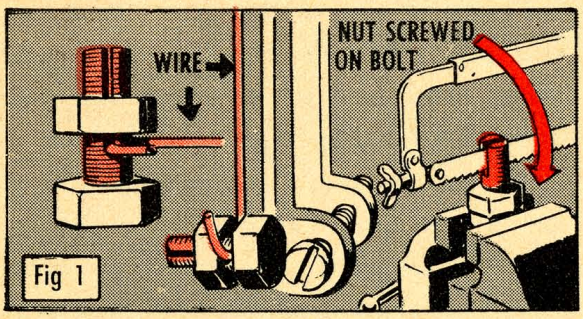
If you don't, pressure may build up in the tank because of a bad relief valve. This could force fuel from the tank into the engine crankcase. The oil is diluted by the fuel and brother, you've got trouble. Or even if it doesn't get into the crankcase, it'll say "Whoosh" and shower you with gas next time you take off the cap.

So when the vehicle is to be parked or stored for any length of time, loosen the cap 1/4 turn.

Holler for a collar?

If some of the 2-1/2 and 5-ton trucks' throttle wires break and lose their collars, don't get hot under yours. Just install a new wire and oil the length of it—lightly now—before it's inserted in the coil shield, so the wire works smoothly.

And if you can't get a collar—make your own. Get a 1/4-inch by 1/2-inch bolt and nut. Take a hack saw and slot the bolt lengthwise far enough to thread the wire as in Fig 1. Tighten the nut and you've got the wire locked in place.



When you do your sawing, use a vise and have the nut screwed all the way on the bolt—back it off after you finish sawing and it'll clean the threads of any burrs for you.

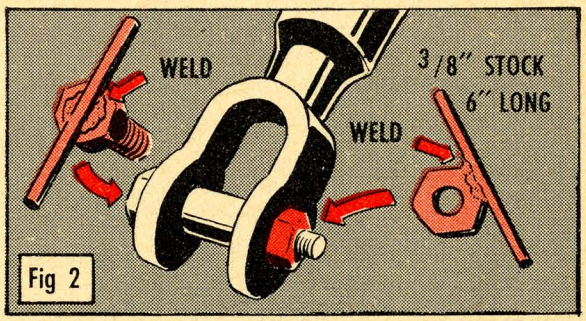
Remember too, that easin' out your hand throttle or choke instead of jerkin' 'em will save you troubles like this.

A new twist

A tool is like a crutch. It's used to help do a job. Not that that's bad, but if you can do without one, why not? Like on the M74 recovery vehicle's front-auxiliary-winch's yoke, f'rinstance.

It takes a wrench to unchain the spade at the yoke. But add a coupla bars to the yoke-bolt and you can do it by hand, with the wrench sleeping in the tool box.

Get two pieces of 3/8″ round stock, 6″ long, and weld one across the yoke bolt's head and the other on the side of its nut (Fig 2). With them on, you've got a handy connection. A sure grip and you'll make short work of a small job.



The same deal could also be used on the main-tow-winch.

And talking of that auxiliary winch, remember it's for light loads only. If you're out to yank something like a 5-ton truck, use the main winch. While it's swell for helping the main line bring home its prey, the auxiliary cable's too thin to tackle anything but the light jobs all by itself.

Careful with the cables

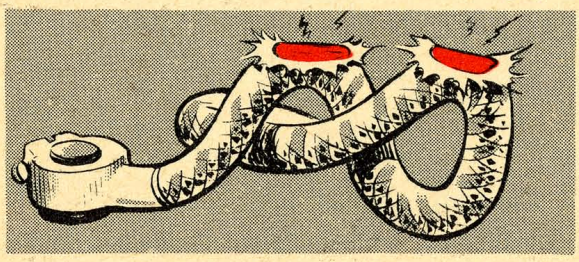
The battery cables on your M34's and M35's, that is. A slew of these trucks were checked recently, and almost half of them had chafed or burned cables.

Since these battery cables carry the full charge of your 24-volt batteries, a short circuit's no joke. Even if she doesn't blow up the batteries, you'll

get plenty fireworks. Not to mention finding yourself afoot.

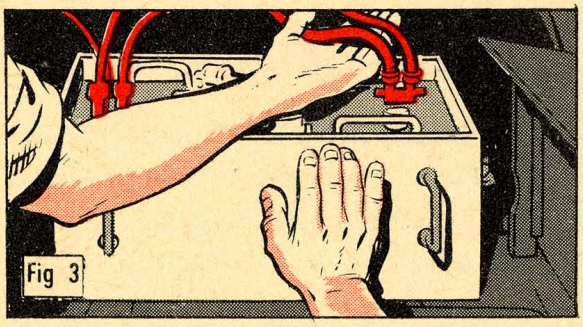
Here's the trouble—as you know, the battery box on the Reos slides out from under the cab. So, to let you slide it out without taking off the battery cables, you have lots of slack in the cables.

That slack is what causes the trouble when you get careless sliding the battery box back in. Sometimes it runs back through the hole in the frame and sags down onto the hot exhaust pipe.

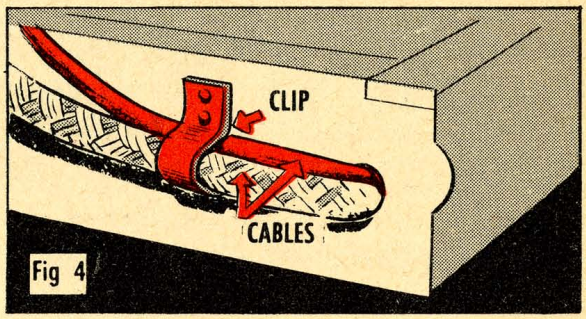


Sometimes it gets bunched up behind the batteries and gets smashed between them and the frame. And sometimes the spacer-shield on the battery box squeezes the cable against the frame. No matter what happens, the results are bad.

So what do you do about it? First of all, you always be darn careful to hold your cables up-and-over your batteries when you push the box back in (Fig 3).



The real sharp operators are drawing a Clip (Ord Stock No. H104-0120526) 9/16-in, 1/4-in hole and fastening cables No. 82 and No. 4 to the frame, right inside the hole they run through. You've got no drilling; just put your clip on the bolt that already holds the air-line clip (Fig 4).



Keep 'em moving

Into Ordnance, that is.

It sometimes happens that you open the shop in the morning and find that you have a half-dozen little jobs sitting there, and one or two vehicles you have to get ready to go to Ordnance.

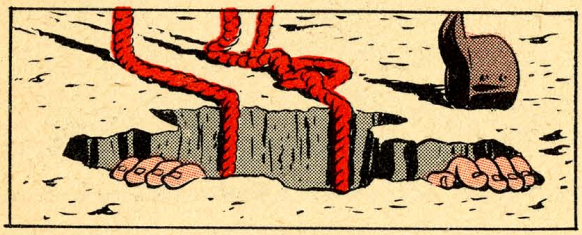
Naturally, it's a big temptation to get on the simple stuff at once and get the vehicles back into service the same day. Preparation of the real sick ones for Ordnance can wait; you won't see 'em back for several days anyhow.

Only trouble is that it is awful easy to do the same thing the next day, and the next, and so on. So one day comes a sudden movement order, and you're caught. Your cripple isn't back, because Ordnance never had it. And at the same time you can't get a new one for it for the same reason. Makes everyone most unhappy.

Safest way all around is to take 'em in the order they come into the shop. Get your big jobs right on into Ordnance as soon as you can and keep your shop clear for the work in your own echelon.

Hold your load

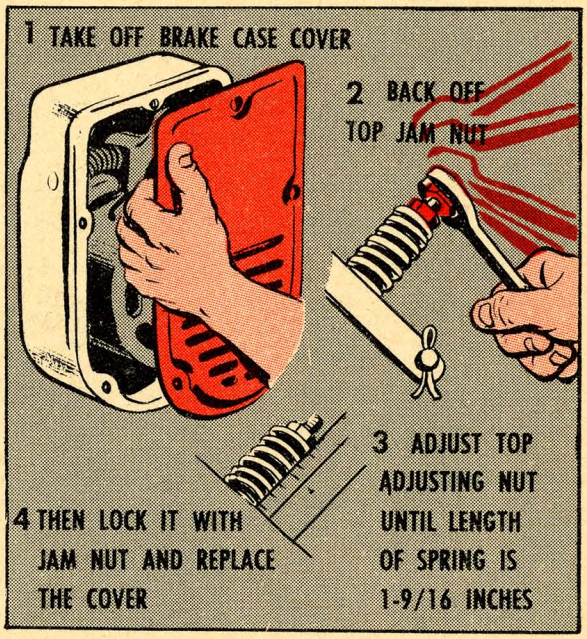
Heard of a 13-ton hoisted load getting away the other day. Busted up a slew of government property and just missed the man guiding it. Could have been real messy.



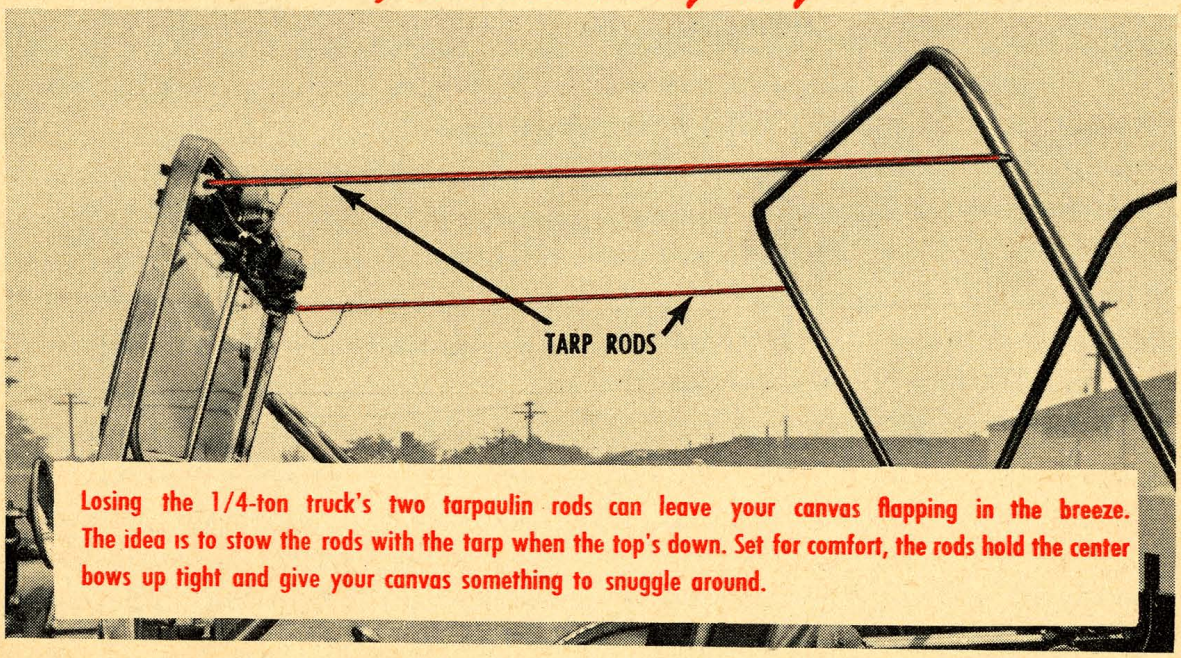
Trouble was, the main-winch safety-brake on the M32 tank-recovery vehicle making the lift wasn't adjusted right. This brake's in there so your load won't drop when you disengage the main clutch to stop lifting.

When it is set right it will hold any load within the capacity of the winch, and you have to shift to LOWER and power the load down. But when it gets too loose, Katy, bar the door!

Figure 53, page 97, TM 9-738 gives you the whole word on this adjustment. If you haven't got the manual, you take off the brake-case cover, back off the top jam-nut and adjust the top adjusting-nut until the length of the spring is just 1-9/16 inches. Then lock it with the jam-nut and replace the cover. Use your head—and you might save it.



For that rainy day



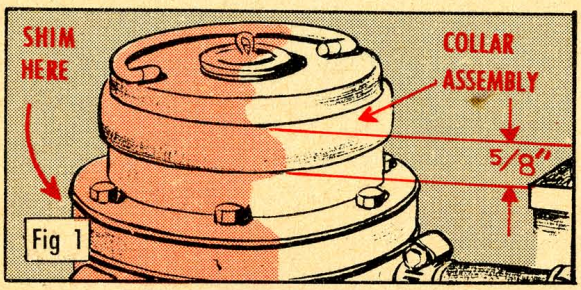
Losing the 1/4-ton truck's two tarpaulin rods can leave your canvas flapping in the breeze. The idea is to stow the rods with the tarp when the top's down. Set for comfort, the rods hold the center bows up tight and give your canvas something to snuggle around.

Fuel-tank filler-cap

Dirt, rust and dust sneaking into the fuel system of your light tank (M41, M41A1 or M42) can give you the heaving splutters or constipation of the fuel line. And that ain't good.

The best way of heading it off is by making sure the left-hand fuel-tank filler-cap isn't doing you dirt. That cap's gotta be just right if you want things on the up and up.

First thing to do is check the position of the collar assembly (Fig 1). If it's 5/8 inch (give or take 1/16 inch) above the top edge of the hull roof you're sitting pretty. Keep the dirt and other muck away from it and your fuel will be OK. If the collar is too low, well . . . see your Ordnance officer right away.



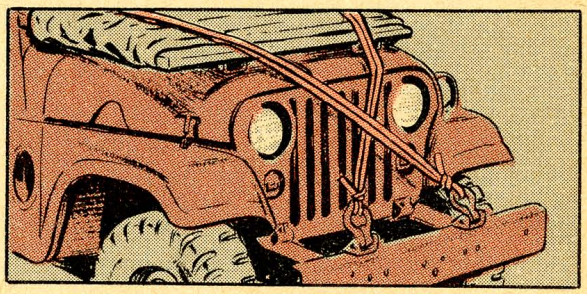
By the foxy use of shims or gaskets between the collar and the flexible filler-assembly (Fig 1) you can squeeze that filler cap up to the right spot. But keep this in mind: You've gotta install gaskets on both sides of each shim added in order to prevent leakage. Ask Ordnance to give you Ord Stock No. G251-7528093. You'll have to make up your own shims.

Glass—handle with care

In the din of battle or on marauding maneuvers, you gotta fold your Jeep's windshield down and cover it up. Unless you want its glass to crack or reflect light. The only trouble is, there's no windshield cover in the Jeep's OVM.

Some men wrap theirs in the tarpaulin-top. Which may be OK, but then you can't use the engine-hood's hold-down strap or hook to hold down the windshield. There's no hole in the tarp to bead it through.

And if you wrap your windshield with the tarpaulin's open-end in front, it'll blow up like a balloon. That's like the engine-hood flying up in your face. You'll break your neck trying to see around it.



Other guys use their poncho as a cover—with the neck hole in front-center to put the tie-down through. But, not everybody's got an extra poncho.

The best combination seems to be the tarpaulin top and a rope tying the windshield down to the bumper tow-rings. Criss-cross the rope from the rings, loop it around the covered windshield and you've got it.

Incidentally, the folded windshield's no place to stack your pack and equipment. One good bounce—crash. Besides which it cuts down your vision.

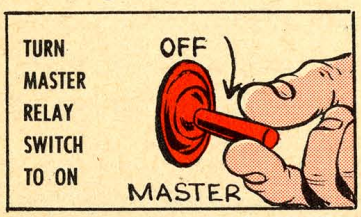
Be sure that you cover up and tie down your windshield. Or you're one warrior they'll be calling Chief Glass-In-The-Face.

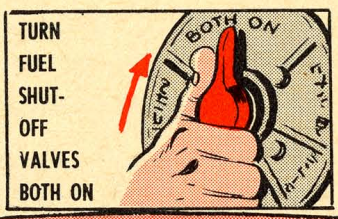
On your Bulldog tanks—
Be in the know when it comes to . . .

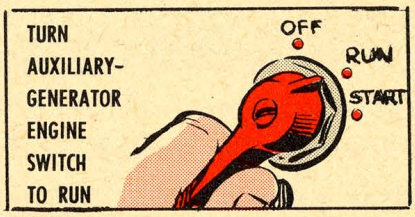
HAND STARTING LI'L JOE

Your M41 light tanks are rigged out with a pull-cable type hand-starter for the auxiliary-generator engine.

It's mounted behind the right engine access-door. And a mighty handy gadget it is to have around, when y'find your batteries too weak for normal starting. Here's how to use it:





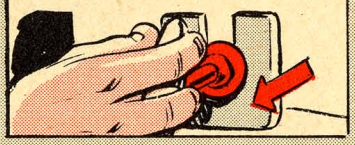


Set your choke control like this:

Engine temperature	first, try control	if no start, go to
Cold (below —25° F)	all way out	3/4 out
Cool (normal)	all way in	all way out
Hot	all way in	all way out

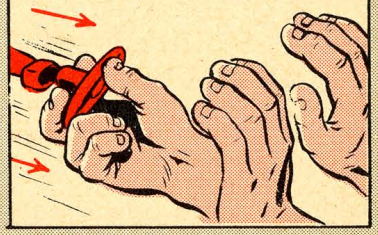
CRANK ENGINE TO COMPRESSION STROKE WITH SERIES OF SHORT EASY PULLS ON HAND-STARTER HANDLE. (WITH NEWLY INSTALLED ENGINE, IT'LL TAKE ABOUT 25 COMPLETE PULLS TO FILL FUEL SYSTEM)

LET CABLE REWIND COMPLETELY; PULL OUT STARTER HANDLE SLOWLY WITH STEADY, EVEN MOTION . . . NO JERKS. IF SHE DOESN'T START IN THREE OR FOUR TRYS CHANGE CHOKE CONTROL LIKE IN CHART ABOVE . . . AND TRY AGAIN.

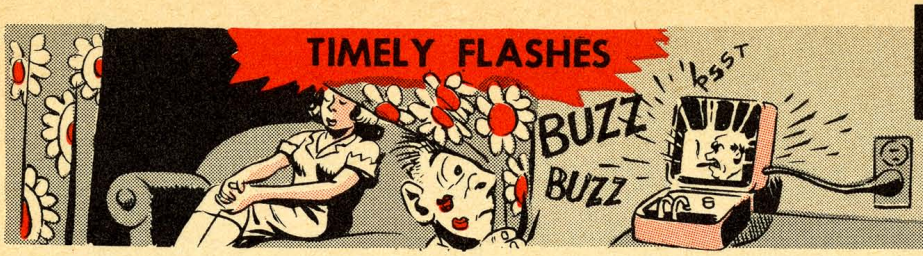


REMEMBER

PULL CRANK HANDLE EASY—WITH STEADY, EVEN PULL. WHISK IT OUT TOO FAST AND YOU'LL RETARD THE ENGINE TIMING . . . THEN'S WHEN YOUR STARTING TROUBLES REALLY WILL START.



Also: At temperatures below +25° F, always run the intake-manifold heaters for about five minutes before trying t'start.

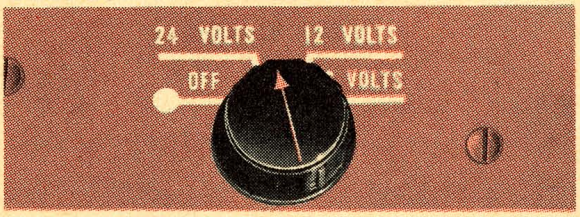


NEW POWER

Takes Care of 6, With No

Hooray—it's here! The new power timing light for ignition setting. It's carried under Fed Stock No. 17-L-12936-300.

It'll replace the neon tube type (Ord Stock No. 41-L1440) in Organizational Tool Sets No. 1 and 2 common.



This light is a universal light which will test 6, 12, and 24-volt systems. You just set the selector switch for the right voltage for the vehicle you are testing. But if you should make a mistake, there is a circuit breaker in the box which protects the innards.

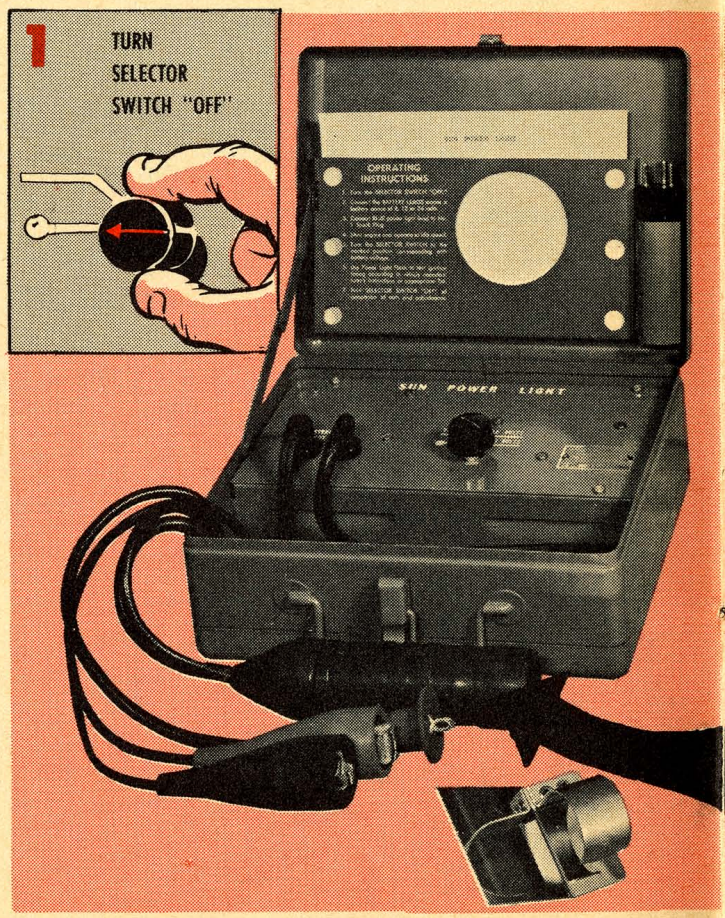
While the power supply for this light is a good-sized box, all you have to take under the hood is a little tube about the same size as the neon-type lights you used to have. But, the blue-white light which pops out is many times brighter than the old neon ever was.

On top of that, since the power is coming from the vehicle battery, not the spark plug, the new light won't make the engine miss.

How does it work? Well, the power supply is adjusted so that it **almost** lights the tube all the time. Then, when the secondary current comes up the lead from the spark plug to the external coil or grid which is wrapped around the light tube, it upsets the balance just enough to make the power current snap across. It's sorta like the little pull on the lanyard that fires a 105 Howitzer.

With this outfit you can see your timing marks even in bright sunlight. (It's still smart to turn the vehicle around or shade the engine, however.)

And there's a lens on this light to keep the flash focused where you need it. To get around generators or water pumps, there is a little mirror which

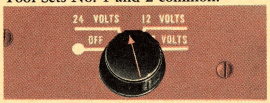


NEW POWER TIMING LIGHT

Takes Care of 6, 12 and 24 Volts With No Fuss or Worry

Hooray—it's here! The new power timing light for ignition setting. It's carried under Fed Stock No. 17-L-12936-300.

It'll replace the neon tube type (Ord Stock No. 41-L1440) in Organizational Tool Sets No. 1 and 2 common.



This light is a universal light which will test 6, 12, and 24-volt systems. You just set the selector switch for the right voltage for the vehicle you are testing. But if you should make a mistake, there is a circuit breaker in the box which protects the innards.

While the power supply for this light is a good-sized box, all you have to take under the hood is a little tube about the same size as the neon-type lights you used to have. But, the blue-white light which pops out is many times brighter than the old neon ever was.

On top of that, since the power is coming from the vehicle battery, not the spark plug, the new light won't make the engine miss.

How does it work? Well, the power supply is adjusted so that it **almost** lights the tube all the time. Then, when the secondary current comes up the lead from the spark plug to the external coil or grid which is wrapped around the light tube, it upsets the balance just enough to make the power current snap across. It's sorta like the little pull on the lanyard that fires a 105 Howitzer.

With this outfit you can see your timing marks even in bright sunlight. (It's still smart to turn the vehicle around or shade the engine, however.)

And there's a lens on this light to keep the flash focused where you need it. To get around generators or water pumps, there is a little mirror which slips on to the head of the light. And you don't have to paint the mark any more. If you can see it when the engine isn't running, you can see it when it is.

Since the new light is fast enough to stop the marks as fast as 3000-RPM, it will give you a quick *go, no-go,* test on the automatic spark, too. You set your time with the engine idling and then rev it up. The moving timing mark should appear to shift in relation to the fixed mark, showing you that the automatic spark advance is working. If it does not, you send your distributor to the shop for a complete check, on the distributor scope.

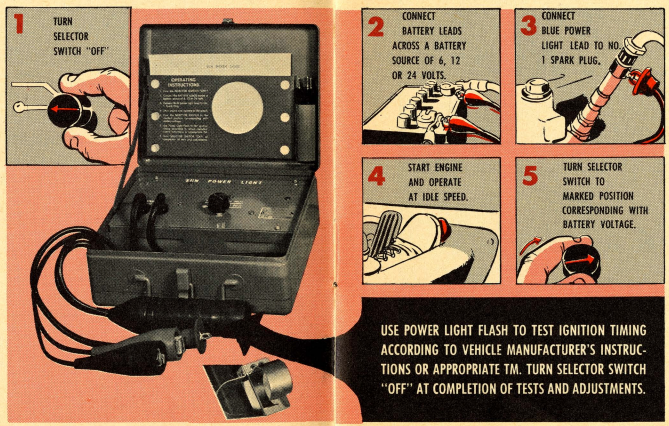
And on tanks, you can check the synchronization of the magnetos in a jiffy. Take any cylinder for which a timing mark is provided, and check and set the mag from the *F* plug. With this one firing right on the mark, check the *A* plug in the same cylinder. It too should be right on the mark. If it is not, set it so it is. (Remember your Continental V12 has 4 magnetos.)

It is important that both plugs in a cylinder fire at the same instant, or the one that fires first will fire the charge—but weakly—and your engine won't have the power it should.

The shape of the combustion chambers on these engines is designed to be most effective when the charge is lighted from both plugs at the same time. Having one side ahead of the other gives much the same result as having the ignition retarded a little.

It is also possible to use this light to time magneto-fired engines in vehicles which have no battery, such as unlighted tractors, by taking any 6 or 12-volt battery to the vehicle to power the light. Hook the light to the battery, and run a lead from the battery negative post to the vehicle frame to complete the high-tension circuit.

To use this new light with the waterproof ignition systems, you need the spark-plug adapter from the Adapter Kit (Ord Stock No. 17-A-3150), which you probably have and which is authorized for 2nd-echelon shops. The power leads can be hooked to the battery cables.



TIMING LIGHT

12 and 24 Volts Fuss or Worry

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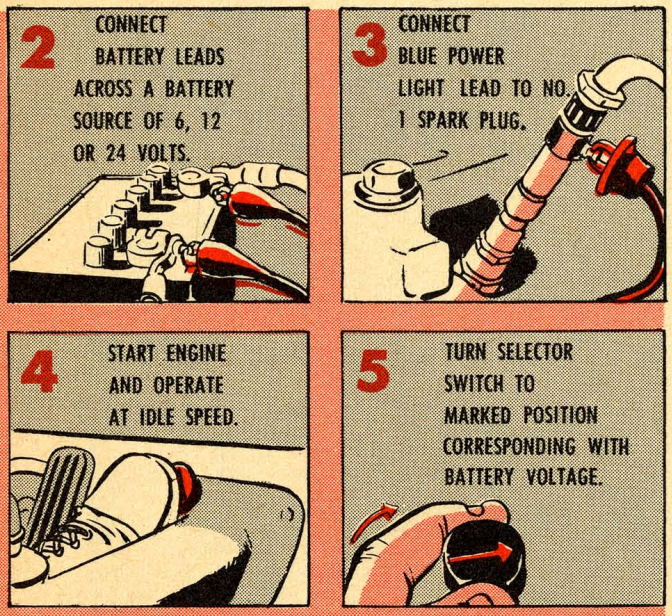
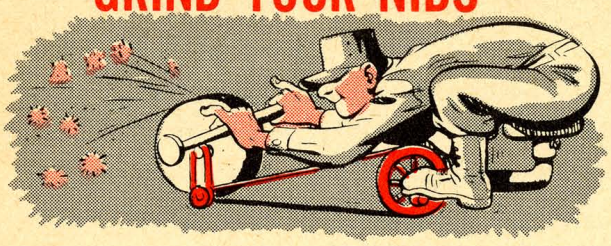


USE POWER LIGHT FLASH TO TEST IGNITION TIMING ACCORDING TO VEHICLE MANUFACTURER'S INSTRUCTIONS OR APPROPRIATE TM. TURN SELECTOR SWITCH "OFF" AT COMPLETION OF TESTS AND ADJUSTMENTS.

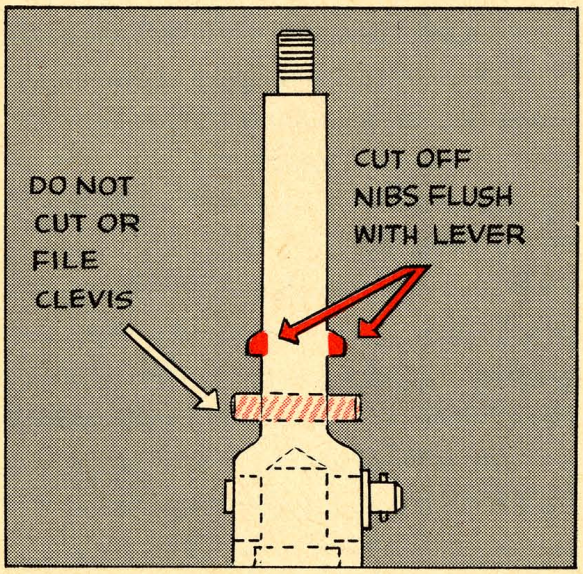
GRIND YOUR NIBS



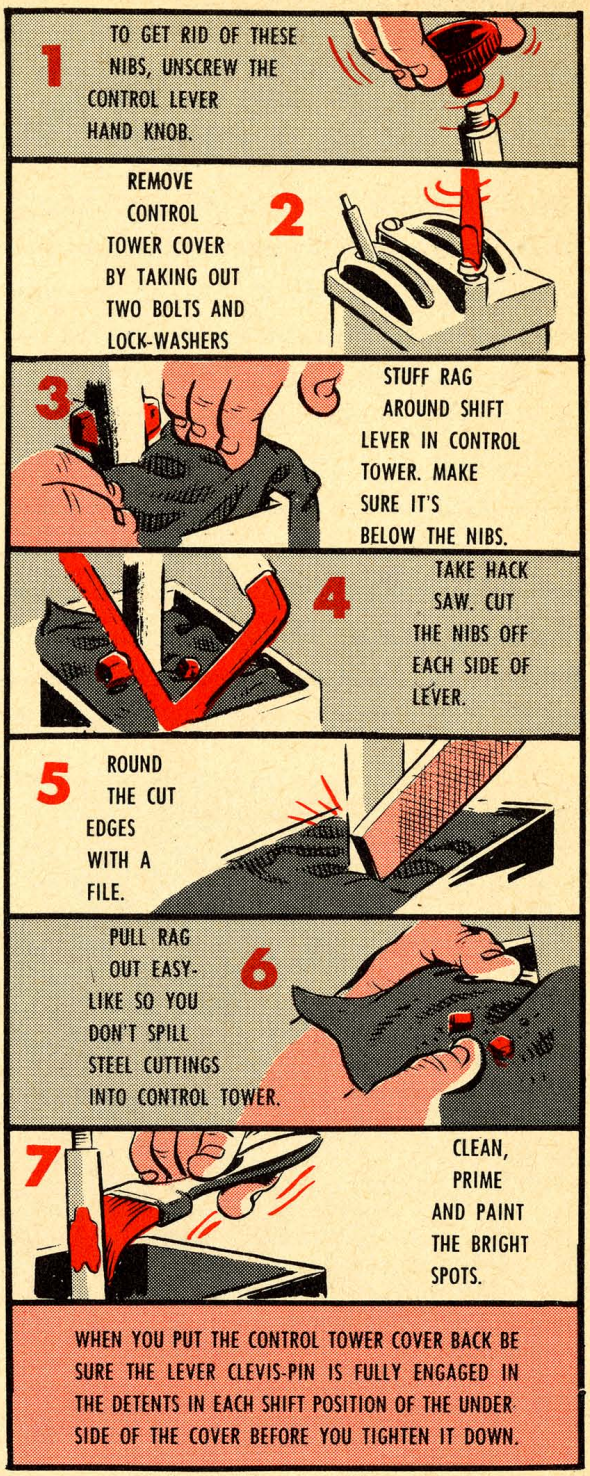
There are a couple of shiftless nibs bothering your M135 that've just got to go. You'll find them on the transmission shift-control lever. But you've got to be careful when you're doing it like TB 9-819A-15 tells you.

When you're starting to plug up a hill and begin to lose speed, you can make a fast shift from HIGH range to LOW range and keep on rolling. But, with these nibs in the way it's possible that you won't make the shift fast enough and start rolling back a little before you complete the shift.

When a forward shift is made with the axles, shafts and transfer rolling backwards, they get yanked in the opposite direction and the strain'll break the transmission output-shaft.

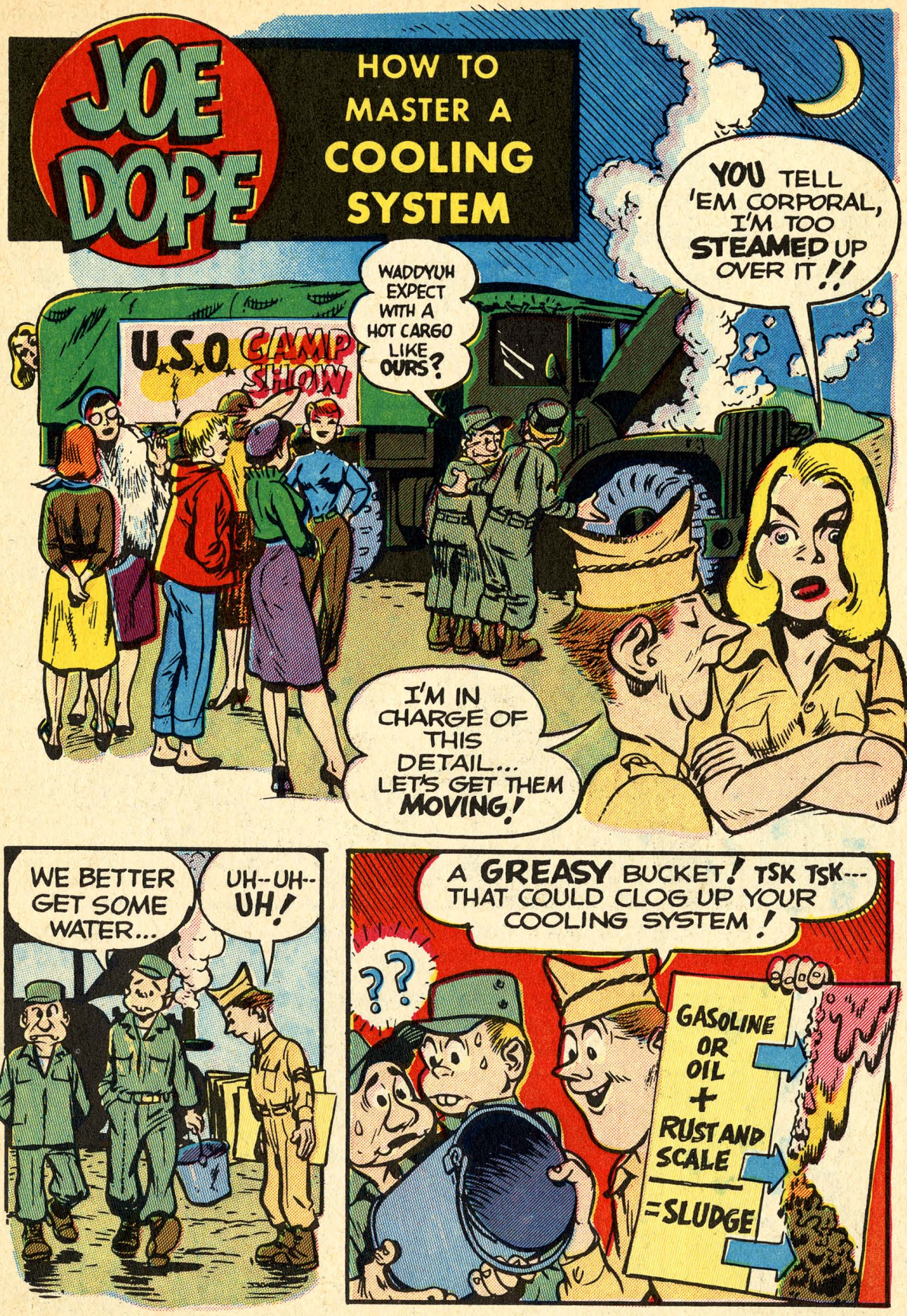


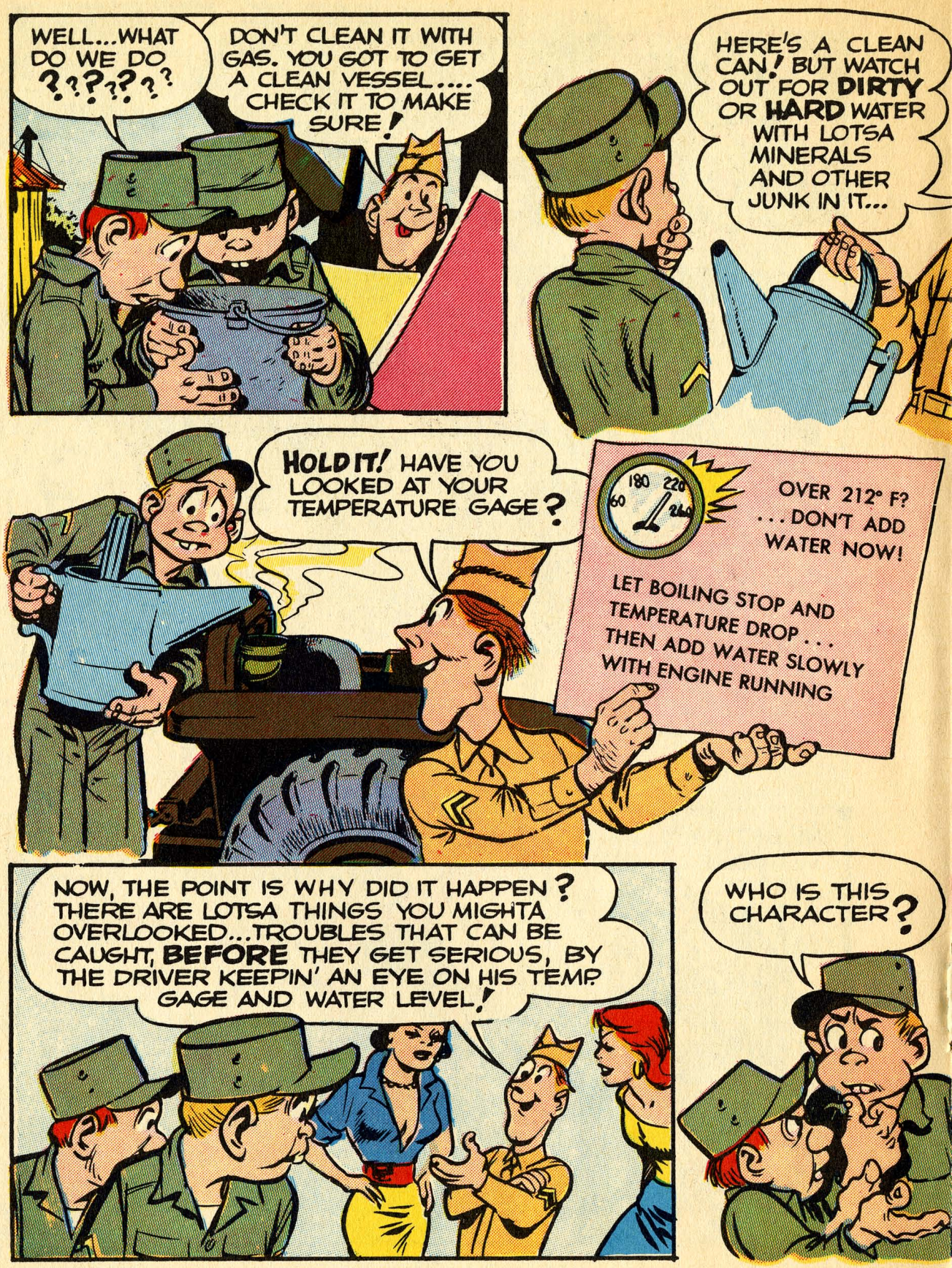
HERE'S WHAT YOUR MECHANIC CAN DO:

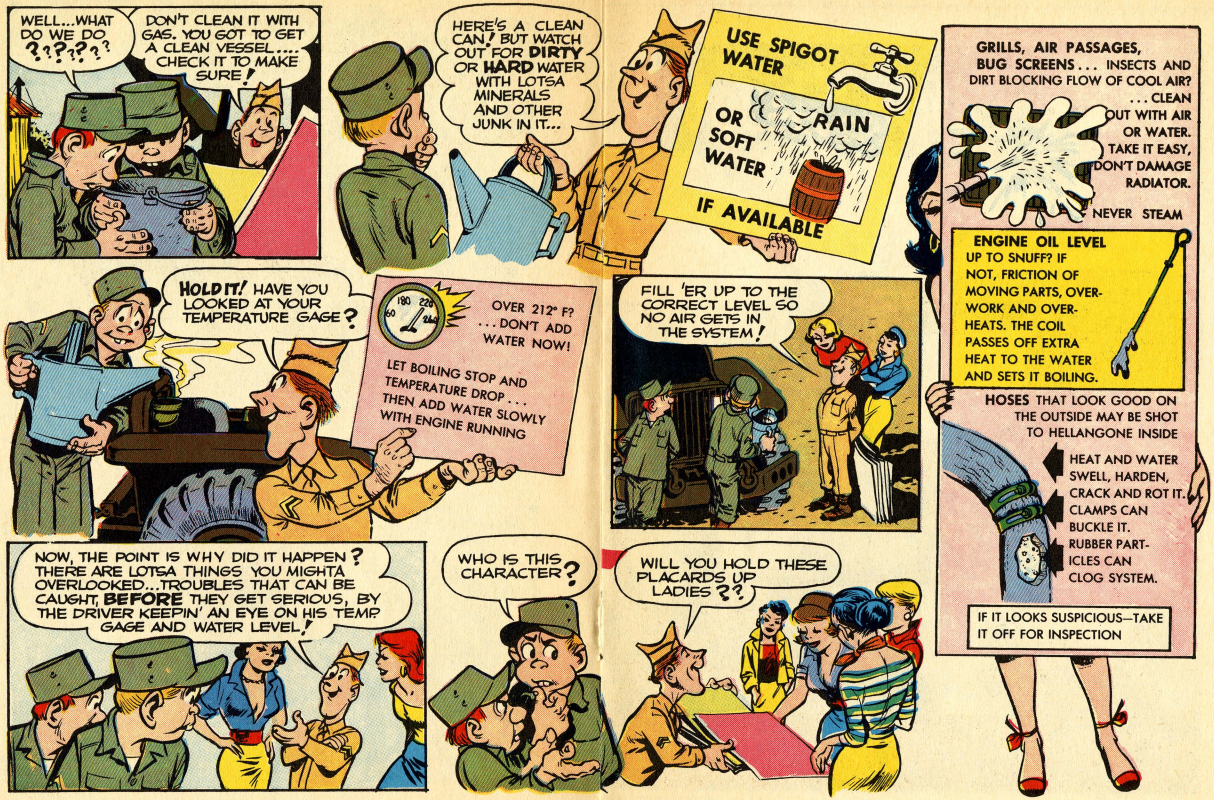


You're on your own now if that M135 rolls back a bit before you downshift and get going forward on a hill.

You can shift the lever but you can't shift the blame.


JOE DOPE
HOW TO MASTER A COOLING SYSTEM
U.S.O. CAMP SHOW
WADDYUH EXPECT WITH A HOT CARGO LIKE OURS?
YOU TELL 'EM CORPORAL, I'M TOO STEAMED UP OVER IT!!
I'M IN CHARGE OF THIS DETAIL... LET'S GET THEM MOVING!
WE BETTER GET SOME WATER...
UH--UH--UH!
A GREASY BUCKET! TSK TSK--- THAT COULD CLOG UP YOUR COOLING SYSTEM!
??
GASOLINE OR OIL + RUST AND SCALE = SLUDGE


WELL...WHAT DO WE DO ?!?!?!?!?
DON'T CLEAN IT WITH GAS. YOU GOT TO GET A CLEAN VESSEL.... CHECK IT TO MAKE SURE!
HERE'S A CLEAN CAN! BUT WATCH OUT FOR DIRTY OR HARD WATER WITH LOTSA MINERALS AND OTHER JUNK IN IT...
HOLD IT! HAVE YOU LOOKED AT YOUR TEMPERATURE GAGE?
OVER 212° F? ...DON'T ADD WATER NOW!
LET BOILING STOP AND TEMPERATURE DROP... THEN ADD WATER SLOWLY WITH ENGINE RUNNING
NOW, THE POINT IS WHY DID IT HAPPEN? THERE ARE LOTSA THINGS YOU MIGHTA OVERLOOKED...TROUBLES THAT CAN BE CAUGHT, BEFORE THEY GET SERIOUS, BY THE DRIVER KEEPIN' AN EYE ON HIS TEMP. GAGE AND WATER LEVEL!
WHO IS THIS CHARACTER?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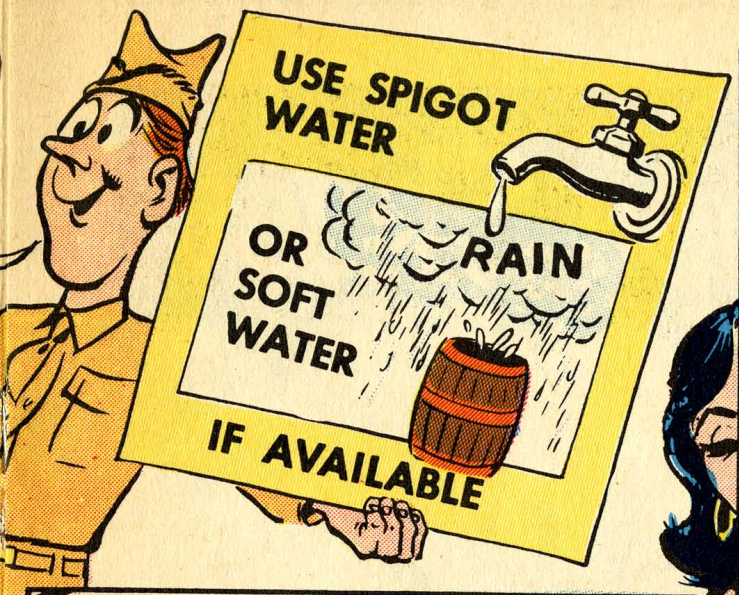
HERE'S A CLEAN CAN! BUT WATCH OUT FOR DIRTY OR HARD WATER WITH LOTSA MINERALS AND OTHER JUNK IN IT...
USE SPIGOT WATER
OR RAIN SOFT WATER
IF AVAILABLE
GRILLS, AIR PASSAGES, BUG SCREENS... INSECTS AND DIRT BLOCKING FLOW OF COOL AIR? ...CLEAN OUT WITH AIR OR WATER. TAKE IT EASY, DON'T DAMAGE RADIATOR.
NEVER STEAM
HOLD IT! HAVE YOU LOOKED AT YOUR TEMPERATURE GAGE?
OVER 212° F? ...DON'T ADD WATER NOW!
LET BOILING STOP AND TEMPERATURE DROP ... THEN ADD WATER SLOWLY WITH ENGINE RUNNING
FILL 'ER UP TO THE CORRECT LEVEL SO NO AIR GETS IN THE SYSTEM!
ENGINE OIL LEVEL
UP TO SNUFF? IF NOT, FRICTION OF MOVING PARTS, OVER-WORK AND OVER-HEATS. THE COIL PASSES OFF EXTRA HEAT TO THE WATER AND SETS IT BOILING.
HOSES THAT LOOK GOOD ON THE OUTSIDE MAY BE SHOT TO HELLANGONE INSIDE
HEAT AND WATER SWELL, HARDEN, CRACK AND ROT IT.
CLAMPS CAN BUCKLE IT.
RUBBER PART-ICLES CAN CLOG SYSTEM.
IF IT LOOKS SUSPICIOUS—TAKE IT OFF FOR INSPECTION
NOW, THE POINT IS WHY DID IT HAPPEN? THERE ARE LOTSA THINGS YOU MIGHTA OVERLOOKED...TROUBLES THAT CAN BE CAUGHT, BEFORE THEY GET SERIOUS, BY THE DRIVER KEEPIN' AN EYE ON HIS TEMP GAGE AND WATER LEVEL!
WHO IS THIS CHARACTER?
WILL YOU HOLD THESE PLACARDS UP LADIES??



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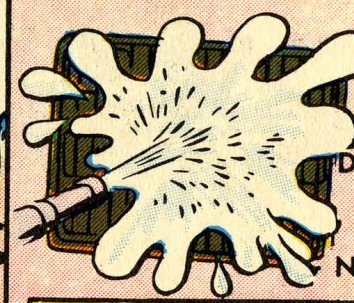

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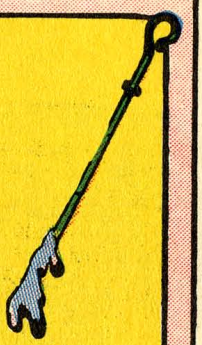

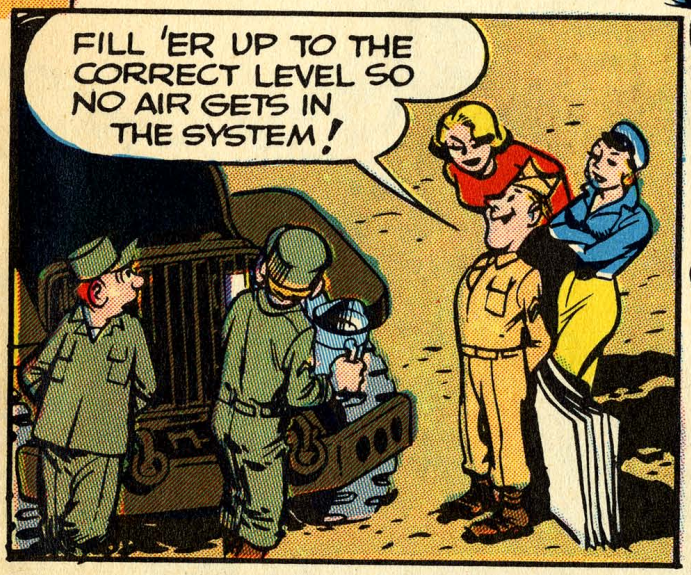

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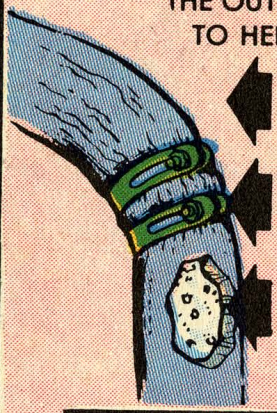

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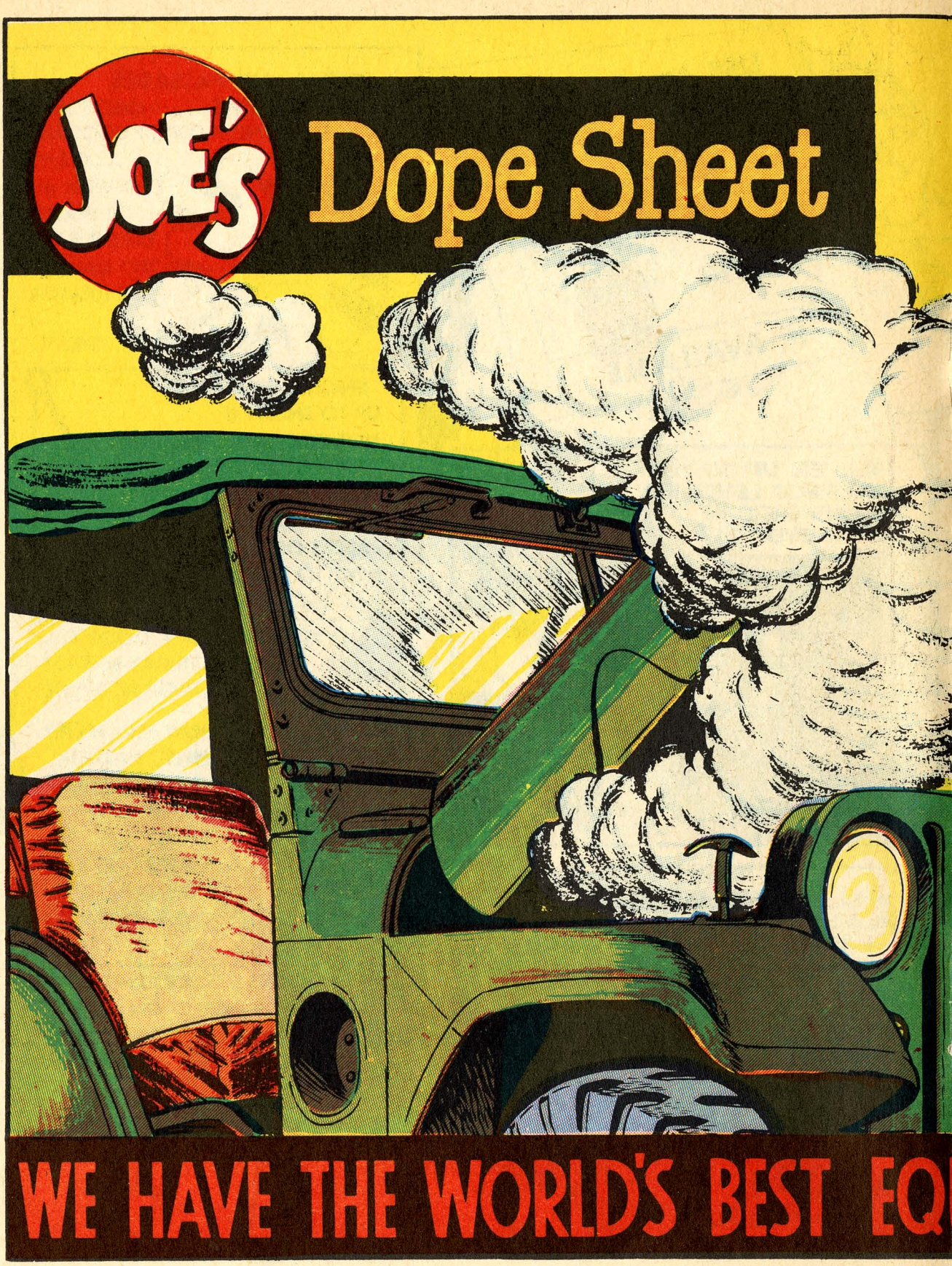
IF IT LOOKS SUSPICIOUS—TAKE IT OFF FOR INSPECTION



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UIPMENT... Take care of it

5 BY WILL EISNER

YOU . . . THE VEHICLE DRIVER . . . CAN PLAY PRIVATE-EYE AND

DARNED NEAR ALL COOLING SYSTEM TROUBLES CAN BE CAUGHT BY THE DRIVER BEFORE THEY GET TO WORK AND CAUSE SOME SERIOUS TROUBLES.

LEAKAGE OUTSIDE THE SYSTEM

POSSIBLE CAUSES	FIX	DRIVER 1st ECHELON	MECHANIC 2nd ECHELON	ORDNANCE 3rd ECHELON
LOOSE HOSE CLAMPS	TIGHTEN, (IF NECESSARY) REPLACE	X		
BAD RUBBER HOSE	REPLACE		X	
BROKEN RADIATOR SEAMS	REPORT IMMEDIATELY		EXCHANGE	REPAIR
WORN WATER PUMP	HAVE REMOVED (AND) REPLACED		X	
LOOSE CORE-HOLE	HAVE REPAIRED			X
DAMAGED GASKETS	CHECK FOR LEAKS AT WATER PUMP, CYL. HEAD, THERMO HOUSING	X		
CRACKED CYLINDER HEAD	NEW ONE NEEDED		X	
CRACKED CYLINDER BLOCK	NEW ONE NEEDED			X
CRACKED THERMOSTAT HOUSING AT WATER OUTLET ELBOW	NEW THERMOSTAT HOUSING AND GASKET			X
LEAK AT HEATER CONNECTIONS	TIGHTEN	X		
LEAK AT WATER-TEMPERATURE SENDING-UNIT ON WATER MANIFOLD	TIGHTEN		X	
LEAK AT EXHAUST MANIFOLD CENTER STUD (LONG JOBS)	REMOVE AND COAT STUDS WITH SEALING COMPOUND —REINSTALL			X

POOR CIRCULATION

POSSIBLE CAUSES	FIX	DRIVER 1st ECHELON	MECHANIC 2nd ECHELON	ORDNANCE 3rd ECHELON
PLUGGED RADIATOR CORE	DRAIN AND REVERSE FLUSH RADIATOR		X	
PLUGGED WATER JACKET	DRAIN SYSTEM; DISCONNECT RADIATOR HOSES AND REVERSE FLUSH BLOCK		X	
WATER LEVEL LOW	REFILL RADIATOR	X		
COLLAPSED RADIATOR HOSE	REPLACE HOSE AND CHECK CLAMPS		X	
WATER PUMP IMPELLER LOOSE ON SHAFT	WATER PUMP REPLACED		X	
FAN BELT OUT OF ADJUSTMENT		ADJUST	REPLACE	
SCALE IN CYLINDER BLOCK	CLEAN AND NEUTRALIZE SYSTEM, USE RUST PREVENTIVE		X	

LEAKS INSIDE SYSTEM

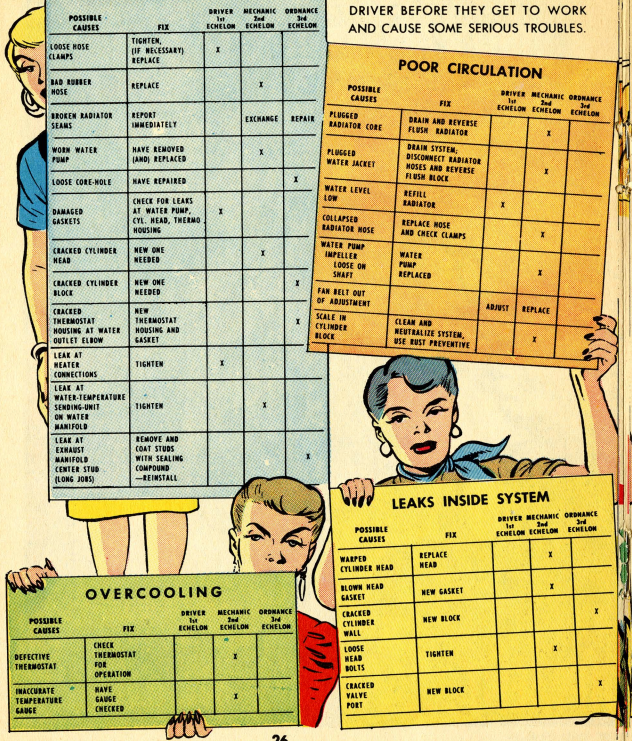
POSSIBLE CAUSES	FIX	DRIVER 1st ECHELON	MECHANIC 2nd ECHELON	ORDNANCE 3rd ECHELON
WARPED CYLINDER HEAD	REPLACE HEAD		X	
BLOWN HEAD GASKET	NEW GASKET		X	
CRACKED CYLINDER WALL	NEW BLOCK			X
LOOSE HEAD BOLTS	TIGHTEN		X	
CRACKED VALVE PORT	NEW BLOCK			X

OVERCOOLING

POSSIBLE CAUSES	FIX	DRIVER 1st ECHELON	MECHANIC 2nd ECHELON	ORDNANCE 3rd ECHELON
DEFECTIVE THERMOSTAT	CHECK THERMOSTAT FOR OPERATION		X	
INACCURATE TEMPERATURE GAUGE	HAVE GAUGE CHECKED		X	

YOU . . . THE VEHICLE DRIVER . . . **CAN PLAY PRIVATE-EYE AND HELP YOUR UNIT MECHANIC.**

DARNED NEAR ALL COOLING SYSTEM TROUBLES CAN BE CAUGHT BY THE DRIVER BEFORE THEY GET TO WORK AND CAUSE SOME SERIOUS TROUBLES.



LEAKAGE OUTSIDE THE SYSTEM

POSSIBLE CAUSES	FIX	DRIVER 1st ECHELON	MECHANIC 2nd ECHELON	ORDNANCE 3rd ECHELON
LOOSE HOSE CLAMPS	TIGHTEN (IF NECESSARY) REPLACE	X		
BAD RUBBER HOSE	REPLACE		X	
BROKEN RADIATOR SEAMS	REPORT IMMEDIATELY		EXCHANGE	REPAIR
WORN WATER PUMP	HAVE REMOVED (AND) REPLACED		X	
LOOSE CORE-HOLE	HAVE REPAIRED			X
DAMAGED GASKETS	CHECK FOR LEAKS AT WATER PUMP, CYL. HEAD, THERMO HOUSING	X		
CRACKED CYLINDER HEAD	NEW ONE NEEDED		X	
CRACKED CYLINDER BLOCK	NEW ONE NEEDED			X
CRACKED THERMOSTAT HOUSING AT WATER OUTLET ELBOW	NEW THERMOSTAT HOUSING AND GASKET			X
LEAK AT HEATER CONNECTIONS	TIGHTEN	X		
LEAK AT WATER-TEMPERATURE SENDING-UNIT OR WATER MANIFOLD	TIGHTEN		X	
LEAK AT EXHAUST MANIFOLD CENTER STUD (LONG JOBS)	REMOVE AND COAT STUDS WITH SEALING COMPOUND —REINSTALL			X

POOR CIRCULATION

POSSIBLE CAUSES	FIX	DRIVER 1st ECHELON	MECHANIC 2nd ECHELON	ORDNANCE 3rd ECHELON
PLUGGED RADIATOR CORE	DRAIN AND REVERSE FLUSH RADIATOR		X	
PLUGGED WATER JACKET	DRAIN SYSTEM; DISCONNECT RADIATOR HOSES AND REVERSE FLUSH BLOCK		X	
WATER LEVEL LOW	REFILL RADIATOR	X		
COLLAPSED RADIATOR HOSE	REPLACE HOSE AND CHECK CLAMPS		X	
WATER PUMP IMPELLER LOOSE ON SHAFT	WATER PUMP REPLACED		X	
FAN BELT OUT OF ADJUSTMENT		ADJUST	REPLACE	
SCALE IN CYLINDER BLOCK	CLEAN AND NEUTRALIZE SYSTEM, USE RUST PREVENTIVE		X	

LEAKS INSIDE SYSTEM

POSSIBLE CAUSES	FIX	DRIVER 1st ECHELON	MECHANIC 2nd ECHELON	ORDNANCE 3rd ECHELON
WARPED CYLINDER HEAD	REPLACE HEAD		X	
BLOWN HEAD GASKET	NEW GASKET		X	
CRACKED CYLINDER WALL	NEW BLOCK			X
LOOSE HEAD BOLTS	TIGHTEN		X	
CRACKED VALVE PORT	NEW BLOCK			X

OVERCOOLING

POSSIBLE CAUSES	FIX	DRIVER 1st ECHELON	MECHANIC 2nd ECHELON	ORDNANCE 3rd ECHELON
DEFECTIVE THERMOSTAT	CHECK THERMOSTAT FOR OPERATION		X	
INACCURATE TEMPERATURE GAUGE	HAVE GAUGE CHECKED		X	

OVERFLOW LOSS

POSSIBLE CAUSES	FIX	DRIVER 1st ECHELON	MECHANIC 2nd ECHELON	ORDNANCE 3rd ECHELON
BOILING (OVERHEATING)	THOROUGH CHECK OF COOLING SYSTEM		X	
LEAK IN CYLINDER-HEAD GASKET	REPLACE GASKET; CHECK FOR WATER IN ENGINE OIL		X	
PLUGGED RADIATOR	REVERSE FLUSH RADIATOR ACCORDING TO TM		X	
OVERFILLING	ONLY FILL RADIATOR TO ABOUT 1 INCH BELOW FILLER NECK	X		

OVERHEATING

POSSIBLE CAUSES	FIX	DRIVER 1st ECHELON	MECHANIC 2nd ECHELON	ORDNANCE 3rd ECHELON
SLUDGE IN CRANKCASE	DRAIN OIL, FLUSH, REFILL			
AIR PASSAGES OF RADIATOR PLUGGED	AIR PRESSURE ON REVERSE SIDE OF CORE TO CLEAN PASSAGE		X	
OBSTRUCTION IN FRONT OF RADIATOR	REMOVE ANYTHING THAT WILL BLOCK AIR	X		
DEFECTIVE THERMOSTAT	CHECK THERMOSTAT FOR OPERATION		X	

CORROSION

POSSIBLE CAUSES	FIX	DRIVER 1st ECHELON	MECHANIC 2nd ECHELON	ORDNANCE 3rd ECHELON
DIRTY WATER	DRAIN AND FLUSH RADIATOR. ADD RUST PREVENTIVE		X	
AIR LEAKS IN SYSTEM	TIGHTEN HOSE CONNECTIONS. CHECK LEAKY CYLINDER HEAD GASKET. CHECK WATER	X		
IMPROPER DRAINING AND SERVICE	BE SURE THAT ALL DRAIN COCKS ARE OPEN WHEN DRAINING	X		

ENGINE OPERATION THAT CAUSES HIGHER THAN NORMAL WATER TEMPERATURES

POSSIBLE CAUSES	FIX	DRIVER 1st ECHELON	MECHANIC 2nd ECHELON	ORDNANCE 3rd ECHELON
INCORRECT IGNITION TIMING	HAVE TIMING CHECKED		X	
INCORRECT VALVE TIMING	HAVE VALVE TIMING CHECKED			X
LOW OIL LEVEL	KEEP FILLED TO REQUIRED LEVEL	X		
TIGHT ENGINE	DRIVE AT MODERATE SPEEDS DURING BREAK-IN . . . NOT TOO SLOW. KEEP A CHECK ON WATER AND OIL LEVELS	X		
CLOGGED, DEFECTIVE MUFFLER OR EXHAUST STACK	CHECK EXHAUST SYSTEM		X	
DRAGGING BRAKES	CHECK AND ADJUST BRAKES		X	
OVERLOADING VEHICLE	LOAD HER RIGHT	X		
DRIVING IN HEAVY SAND OR MUD	AVOID DRIVING IN HEAVY SAND OR MUD WHEN POSSIBLE	X		
ENGINE LABORING ON GRADES	SHIFT TO NEXT LOWEST GEAR TO PREVENT LUGGING OR LABORING	X		
EXCESSIVE ENGINE IDLING	DON'T LET ENGINE IDLE FOR LONG PERIOD OF TIME	X		
"STOP AND GO" DRIVING	DO LESS	X		

HELP YOUR UNIT MECHANIC.

OVERFLOW LOSS

POSSIBLE CAUSES	FIX	DRIVER 1st ECHELON	MECHANIC 2nd ECHELON	ORDNANCE 3rd ECHELON
BOILING (OVERHEATING)	THOROUGH CHECK OF COOLING SYSTEM		X	
LEAK IN CYLNDER-HEAD GASKET	REPLACE GASKET. CHECK FOR WATER IN ENGINE OIL		X	
PLUGGED RADIATOR	REVERSE FLUSH RADIATOR ACCORDING TO TM		X	
OVERFILLING	ONLY FILL RADIATOR TO ABOUT 1 INCH BELOW FILLER NECK	X		

CORROSION

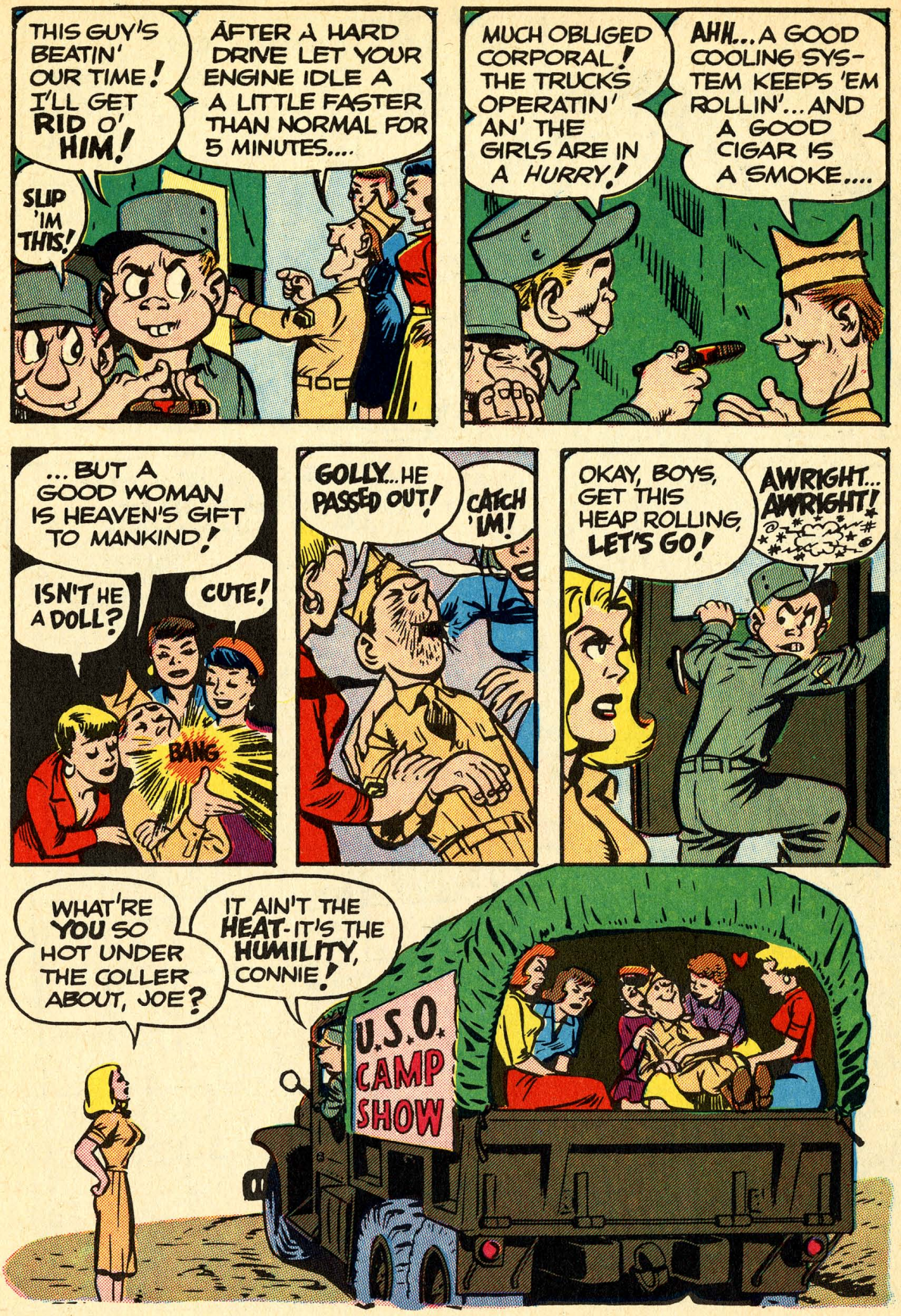
POSSIBLE CAUSES	FIX	DRIVER 1st ECHELON	MECHANIC 2nd ECHELON	ORDNANCE 3rd ECHELON
DIRTY WATER	DRAIN AND FLUSH RADIATOR. ADD RUST PREVENTIVE		X	
AIR LEAKS IN SYSTEM	TIGHTEN HOSE CONNECTIONS. CHECK LEAKY CYLINDER HEAD GASKET. CHECK WATER	X		
IMPROPER DRAINING AND SERVICE	BE SURE THAT ALL DRAIN COCKS ARE OPEN WHEN DRAINING	X		

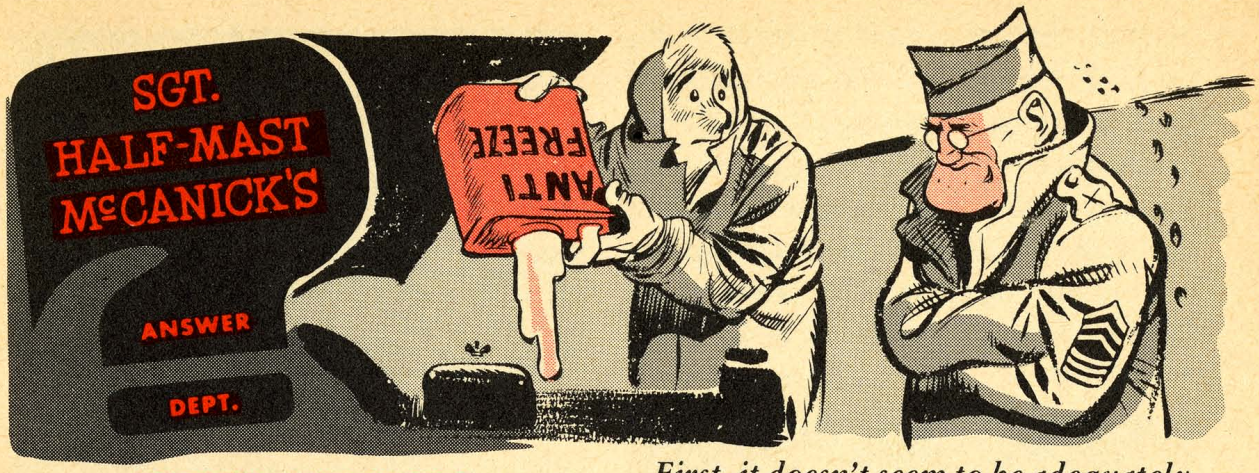
ENGINE OPERATION THAT CAUSES HIGHER THAN NORMAL WATER TEMPERATURES

POSSIBLE CAUSES	FIX	DRIVER 1st ECHELON	MECHANIC 2nd ECHELON	ORDNANCE 3rd ECHELON
INCORRECT IGNITION TIMING	HAVE TIMING CHECKED		X	
INCORRECT VALVE TIMING	HAVE VALVE TIMING CHECKED			X
LOW OIL LEVEL	KEEP FILLED TO REQUIRED LEVEL	X		
TIGHT ENGINE	DRIVE AT MODERATE SPEEDS DURING BREAK-IN . . . NOT TOO SLOW. KEEP A CHECK ON WATER AND OIL LEVELS	X		
CLOGGED, DEFECTIVE MUFFLER OR EXHAUST STACK	CHECK EXHAUST SYSTEM		X	
DRAGGING BRAKES	CHECK AND ADJUST BRAKES		X	
OVERLOADING VEHICLE	LOAD HER RIGHT	X		
DRIVING IN HEAVY SAND OR MUD	AVOID DRIVING IN HEAVY SAND OR MUD WHEN POSSIBLE	X		
ENGINE LABORING ON GRADES	SHIFT TO NEXT LOWEST GEAR TO PREVENT LUGGING OR LABORING	X		
EXCESSIVE ENGINE IDLING	DON'T LET ENGINE IDLE FOR LONG PERIOD OF TIME	X		
"STOP AND GO" DRIVING	DO LESS	X		

OVERHEATING

POSSIBLE CAUSES	FIX	DRIVER 1st ECHELON	MECHANIC 2nd ECHELON	ORDNANCE 3rd ECHELON
SLUDGE IN CRANKCASE	DRAIN OIL, FLUSH, REFILL			
AIR PASSAGES OF RADIATOR PLUGGED	AIR PRESSURE ON REVERSE SIDE OF CORE TO CLEAN PASSAGE		X	
OBSTRUCTION IN FRONT OF RADIATOR	REMOVE ANYTHING THAT WILL BLOCK AIR	X		
DEFECTIVE THERMOSTAT	CHECK THERMOSTAT FOR OPERATION		X	


THIS GUY'S BEATIN' OUR TIME! I'LL GET RID O' HIM!
AFTER A HARD DRIVE LET YOUR ENGINE IDLE A A LITTLE FASTER THAN NORMAL FOR 5 MINUTES....
SLIP 'IM THIS!
MUCH OBLIGED CORPORAL! THE TRUCKS OPERATIN' AN' THE GIRLS ARE IN A HURRY!
AHH... A GOOD COOLING SYSTEM KEEPS 'EM ROLLIN'... AND A GOOD CIGAR IS A SMOKE....
...BUT A GOOD WOMAN IS HEAVEN'S GIFT TO MANKIND!
ISN'T HE A DOLL?
CUTE!
BANG
GOLLY... HE PASSED OUT!
CATCH 'IM!
OKAY, BOYS, GET THIS HEAP ROLLING, LET'S GO!
AWRIGHT... AWRIGHT!
WHAT'RE YOU SO HOT UNDER THE COLLER ABOUT, JOE?
IT AIN'T THE HEAT- IT'S THE HUMILITY, CONNIE!
U.S.O. CAMP SHOW



FROZEN ANTI-FREEZE

Dear Half-Mast,

It says on the cans of ethylene glycol anti-freeze, "Warning, do not store in temperatures lower than zero degrees Fahrenheit." We haven't enough inside storage-space to do anything else but. What harm can storing it outside do?

Sgt M. R. O.

Dear Sergeant M. R. O.

Unmixed with water, the stuff'll freeze at 0°F. While that won't ruin the anti-freeze, it'll have to be thawed out before you'll be able to pour it out of the can. It's just a matter of convenience.

Half-Mast

BOX FIX?

Dear Half-Mast,

We're having troubles with the hull telephone box on our M48 tanks.

First, it doesn't seem to be adequately secured. Gets loose—and sometimes breaks right off the vehicle.

Also, there's quite a lot of condensation occurs inside the box. And this constant dampness is mighty rough on the telephone equipment.

Wondering if you might have some dope on this phone box situation.

Lt C. F. C.

Dear Lt C. F. C.,

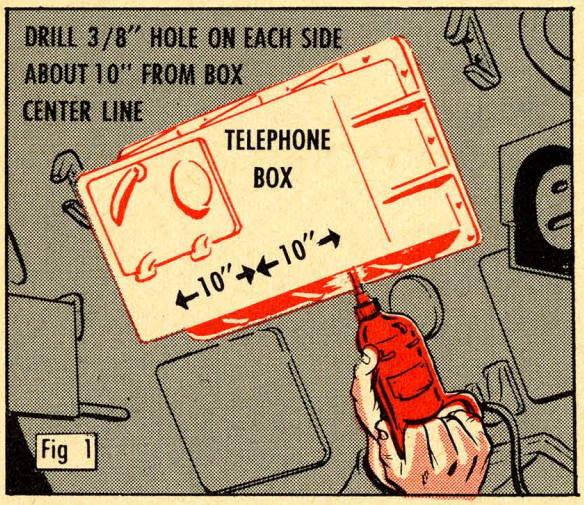
Seems as how the screws that're supposed to hold that box to the hull have proved to be a little light for the job. Stronger (alloyed) screws are on the way.

Meanwhile, your best bet's to see that those you've got are kept tight. This'll cut down on the shock treatment they get when riding in the rough, and they'll be less likely to shear. Make sure they get a good going over at every B service.

That condensation problem seems about the same as bothered earlier medium tanks. Maybe you've seen MWO Ord G1-W53 (30 July 54) which handles the situation on the M46 and M47. Calls for a coupla 3/8-in drain holes drilled in the hull, inside and near the bottom of the box.

Same deal wouldn't help much on the M48, though. With the box attached to the sloping section of the hull, the lowest part is its outside edge.

But y'can fix it up okay—by drilling a couple of 3/8-in holes in the lowest edge of the box itself, like's shown in Fig. 1. An MWO similar to G1-W53 will cover it.



Natch'ly you're sending through UER's on the subject. Right? They're a lotta help in ironing out these troubles.

Half-Mast

LEAKY TRACK ANTENNAS

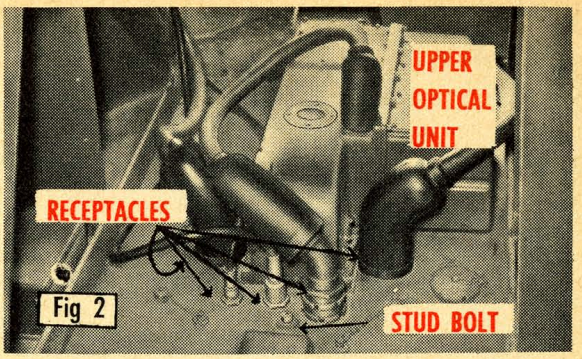
Dear Half-Mast,

We keep on having trouble with water leaks around our M33 FCS's track antenna azimuth drive turntable. Have you got anything on this?

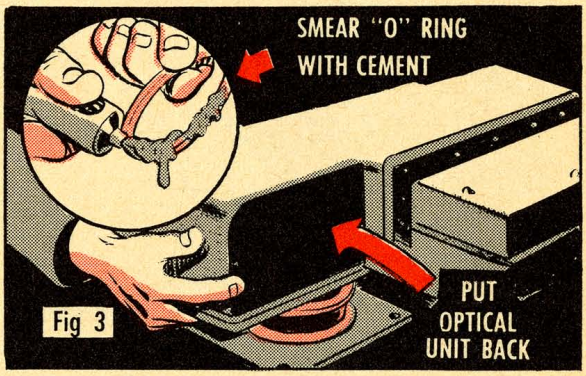
SFC D. K. H.

Dear SFC D. K. H.,

Seven spots on the track antenna's azimuth drive turntable that can let in water (Fig 2) will give the slip ring a fit if they're not sealed.



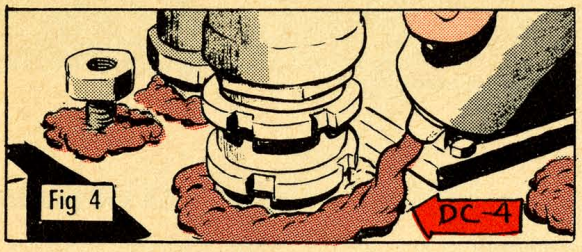
One wet spot is under the upper optical unit. Take the optical unit off the turntable and cement the "O" ring gasket (Fig 3) in place with cement (Ord Stock No. 52-C-1567-50). This cement was originally put in your organizational equipment as Compound WECO-7002. When the "O" ring's been smeared with cement, put the optical unit back in place. Be careful not to get too much on the optical unit.



The optical unit, in place on top the trailer, only makes the trailer 12 feet 1 inch high. If road clearances, during a road march, are high enough, leave the unit on top the trailer. Once you've done a good cement job you don't want to break the seal—more leaks.

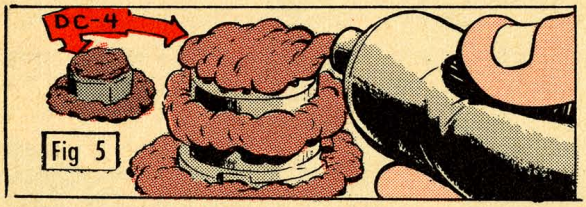
The five bottom receptacles and stud bolt on the roof of the trailer under the antenna should be waterproofed. Loosen the spanner nuts and stud bolt

nut (Fig 4) with a spanner wrench and wrench and put Dow Corning DC-4



compound (Ord Stock No. 52-C-3096-790) under them. Don't spare the compound—tighten the spanner nut and nut—she's sealed.

On the outside of the receptacles stud bolt you use the Dow Corning DC-4 compound. Pull the plug out of the receptacle and spread plenty of the compound all over the receptacle (Fig 5).



Don't be afraid to put plenty of the compound over and in the receptacle pin holes—that's what you're supposed to do. Put the plug back in the receptacle and tighten it down—you're all set for that moisture.

Clean the receptacles and put compound on them every six months, whether you think they need it or not. Be on the safe side.

Half-Mast

INERT FUZE SHORTAGE

Dear Half-Mast,

What'cha gotta do to get those M43A2 inert fuzes for checking the setter-rammer on these 90-mm ack-ack guns? They're listed in Ord 7 SNL D-38 (Cartridge, drill M12B1 w/fuze M43A2) but supply says they just can't get 'em. We're using live rounds and fuzes now and you know that's just not right. Most of our rounds have been cut the maximum number of times and we're expecting something to blow wide open any minute.

What ya' say, Sarge, are those cartridges still being made and if so, why can't we get 'em?

Sgt. J. S. B.

Dear Sgt J. S. B.,

Man, I know just what you mean. Trying to keep a supply of inert fuzes on hand has driven many a good ack-ack man to madness. Using live rounds and fuzes is just asking for trouble, and that trouble can be expensive and dangerous.

The dummy cartridges and fuzes are standard, and they are being made. Keep breathing down the neck of your supply unit and tell them to raise a little hell on up the line. Maybe you can shake some loose somewhere.

Half-Mast

KNOCK-KNOCK

When you've got a problem, just knock on Sgt Half-Mast's door. He'll make you more than welcome. Just tell him all about your maintenance problem—use a card or letter. Send it to **Sgt Half-Mast, c/o PS Magazine, Raritan Arsenal, Metuchen, N. J.** He'll not only answer you, but maybe use it in his column.

ARMAMENT TOPS

Headspacing .30-cal ground mount Browning machine guns—

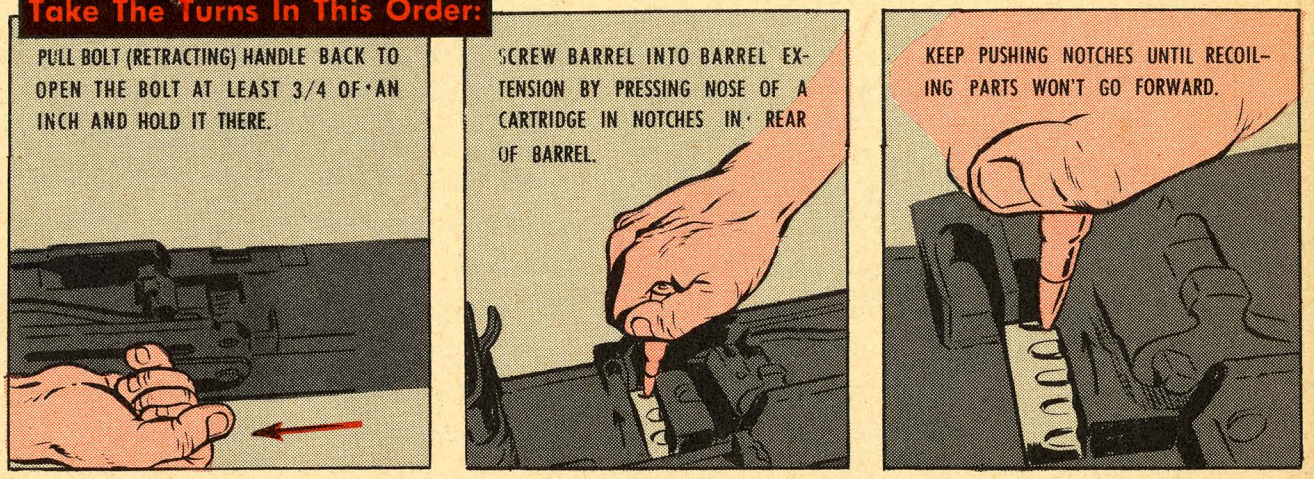
The salute a machine gunner rates in the end . . . may well tell the tale of his

The gunner who has a healthy respect for headspace adjustment chores can be trusted to keep his .30-cal spittin' for all she's worth with nary a stoppage or stutter.

But woe to a guy who plays rough with headspacing. You can chalk him up right now as a likely customer for the boys of the Medical Corps. 'Cause he's gonna find himself stuck with a sick gun most any time. And it can happen when he needs steady fire power in the worstest way.

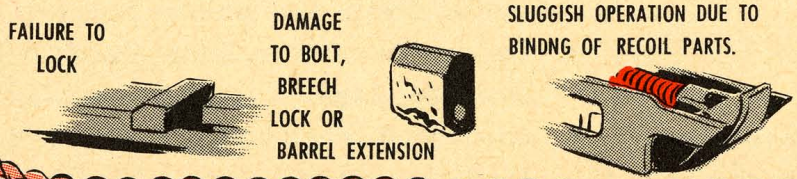
For all intents and purposes, all that a gunner has to remember is that correct headspace adjustment for his baby

Take The Turns In This Order:



Here's what a bum headspace adjustment can do to a good machine gun:

When there isn't enough headspace (insufficient) the breech lock can't go all the way into its recess in the bolt. This can result in:



If there is very very little headspace the notches on the rear end of the barrel can be seen to the rear of the feedway. The bolt won't go all the way forward, and pulling the trigger won't release the firing pin.

ARMAMENT

TOPS OR TAPS

Headspacing .30-cal ground mount Browning machine guns—

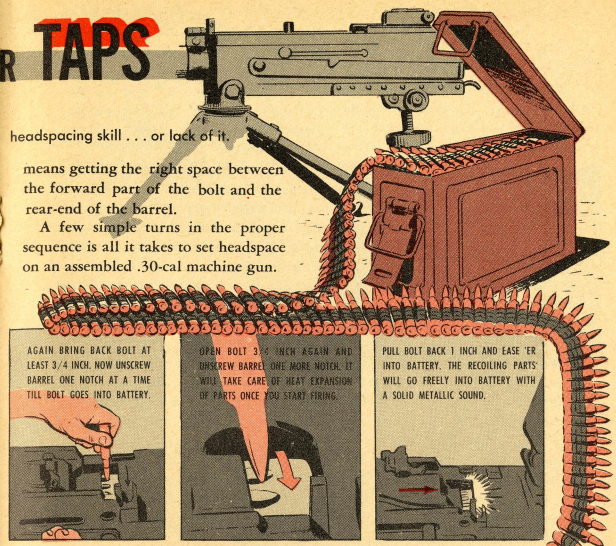
The salute a machine gunner rates in the end . . . may well tell the tale of his headspacing skill . . . or lack of it.

The gunner who has a healthy respect for headspace adjustment chores can be trusted to keep his .30-cal spittin' for all she's worth with nary a stoppage or stutter.

But woe to a guy who plays rough with headspacing. You can chalk him up right now as a likely customer for the boys of the Medical Corps. 'Cause he's gonna find himself stuck with a sick gun most any time. And it can happen when he needs steady fire power in the worstest way.

For all intents and purposes, all that a gunner has to remember is that correct headspace adjustment for his baby means getting the right space between the forward part of the bolt and the rear-end of the barrel.

A few simple turns in the proper sequence is all it takes to set headspace on an assembled .30-cal machine gun.



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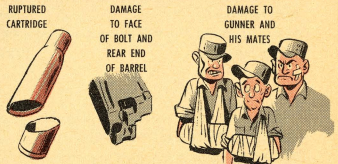
When there is too much headspace (excessive) there's play between the bolt and the barrel. The bolt starts its powerful initial recoil to the rear by itself instead of locked to the barrel extension. The penalty for too much headspace can be:



R TAPS

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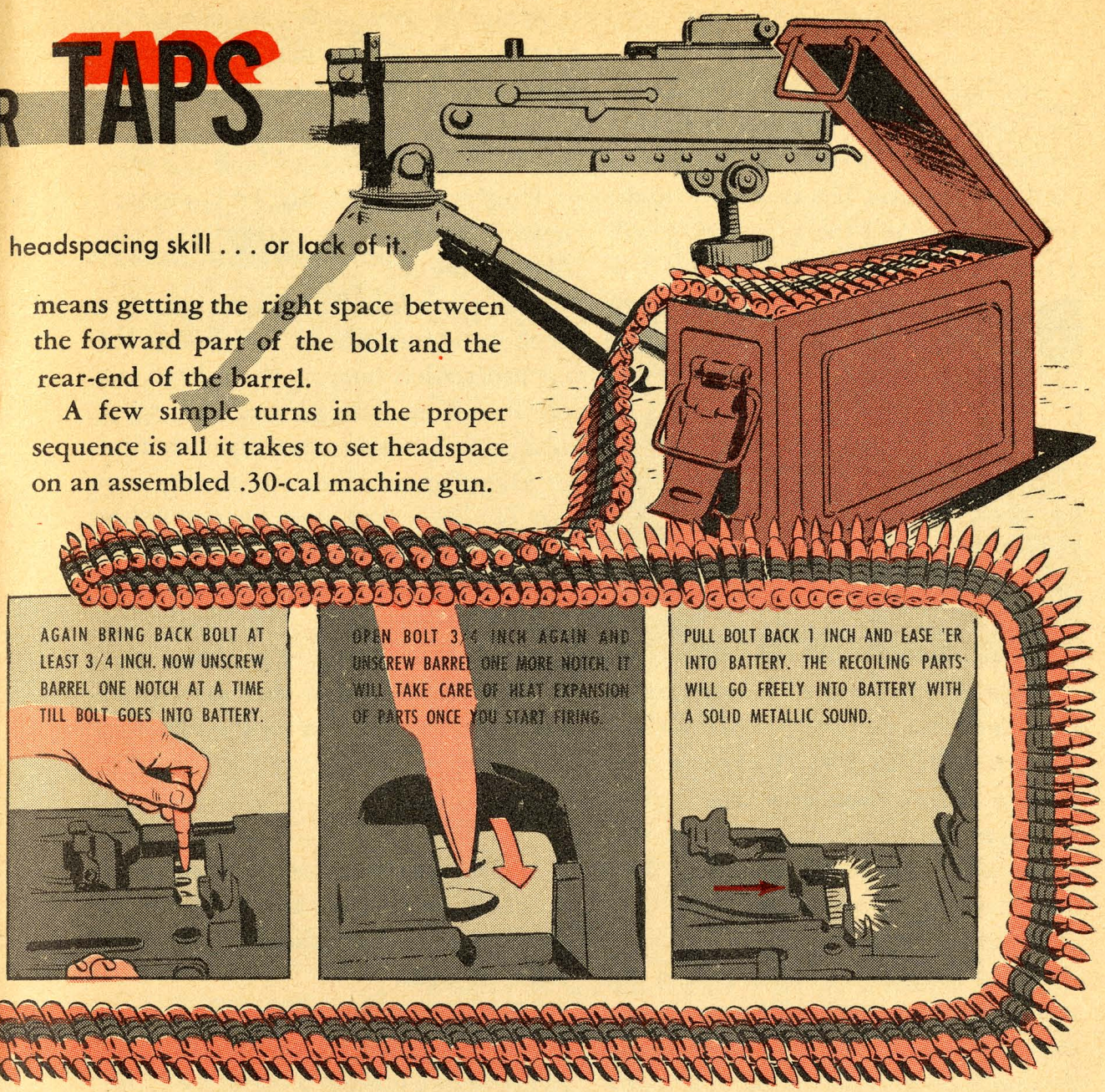

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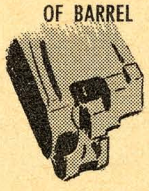
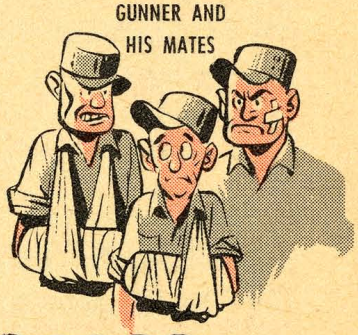
RUPTURED CARTRIDGE

DAMAGE TO FACE OF BOLT AND REAR END OF BARREL

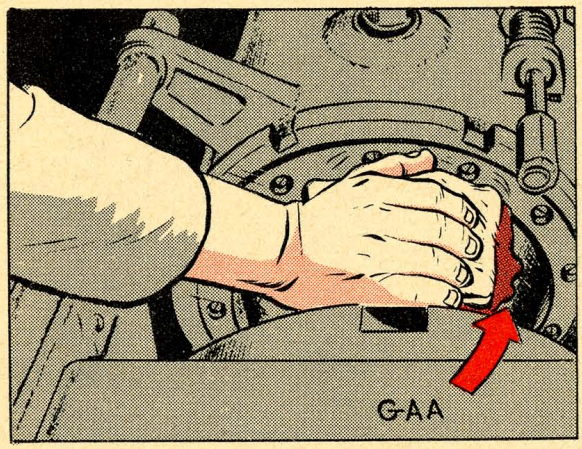


DAMAGE TO GUNNER AND HIS MATES



TANK GUN PROTECTOR

You may be following your LO to the letter but still missing a mighty important lube job on those 76-mm and 90-mm tank guns. The area between the rear follower and the breech ring will get rusty and pitted if it isn't protected.



With the gun out of battery six or eight inches, apply a light coat of GAA grease—Mil-G-10924—all the way around the exposed gun tube surface between the breech ring and the rear follower of the recoil assembly. This area doesn't get any lubrication from the recoil cylinder.

When the gun returns to battery the recoil follower seal will wipe away excess grease and leave it piled up around the seal. Leave it there; it'll protect your piece.

Clean and grease this surface at least every 30 days.

DRAIN THE FIRING LOCK

Moisture in the firing-lock assembly (Ord Stock No. D038-7652292) of those M2A1 90-mm AAA gun mounts is strictly no go. Remove the drain plug weekly to check for dampness. If there's moisture in there, take off the cover plate and dry the assembly. If it's damaged, sound the call for Ordnance.

MORTAR MOUNT MIX-UP

Could be your M23A1 mortar mount's hurtin' for certain and you don't know it.

The elevating mechanisms on some of these 81-mm mounts are missing out on lubrication because the oil recesses are fouled up with grease. The grease was packed into the assembly at the time of manufacture. You can squirt until you're blue in the kidney but the oil just won't get through to the right spots. So, you end up with a rusty, sticky tube.

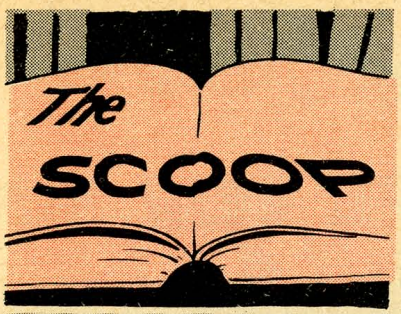
If it's not raising right, call Ordnance and have 'em give your stovepipe the once-over—and if necessary, get a UER (Form 468) in to the Chief of Ordnance.

TOO MUCH BANGING?

If your small-arm is coughing when it should be spittin', and crossing you up on the wet runs, there may be some relief in sight.

SB 9-50 gives you the approximate number of rounds your piece is expected to fire before it needs a major overhaul. It didn't say so exactly, but SB 9-50 also includes T/O&E units in field training as well as in replacement training centers.

A revised SB 9-50 will be out soon giving you the dope.



Here's a list of additional official publications on Ordnance equipment which are of interest to a lot of you.

SNL's

Ord 9 SNL A-50 Sec 2 Gun, dual, auto 40-mm M2A1 and mt, gun, twin 40-mm M4E1, Dec 54

Ord 8 SNL A-55 Sec 17 Mt, trk, pedestal, M25, Jan 55

Ord 8 SNL A-55 Sec 42 Mt, cal. .30 MG (7008929 and 7387769), Dec 54

Ord 9 SNL A-89 Machine gun, cal. .30 M37 (tank), Dec 54

Ord 7 SNL D-32 Vol 2 Gun, 120-mm, M1, M1A1, M1A2, and M1A3 on mt, gun, AA, 120-mm, M1A2, w/mech, recoil 120-mm, M19, M19A1, and M19A2, Nov 54

Ord 8 SNL D-39 Mt, gun, 90-mm, M4 and M4A1; mt, combo gun, M67, Nov 54

Ord 8 SNL D-53 Gun, 120-mm, T123E1; mt, gun, combo, T154, Dec 54

Ord 9 SNL D-53 Gun, 120-mm, T123E1; mt, gun, combo, T154; equilib—7996900, Nov 54

Ord 9 SNL D-65 Lnchr, 762-mm rkt, trk-mtd, XM289, Nov 54

Ord 8 SNL F-140 Quad, gunner's M1 and M1A1, Dec 54

Ord 9 SNL F-140 Quad, gunner's M1 and M1A1, Dec 54

Ord 9 SNL F-205 Vol 2 Light, instr M10, M30, M32, M33, M36, M39C, M42, M44, M45, and T22, Dec 54

Ord 8 SNL F-349 Setter, fuze, M26, Dec 54

Ord 8-9 SNL F-357 Setter, fuze, M27, Dec 54

Ord 9 SNL F-371 Mnt, 'scope, M96 (T189), Nov 54

Ord 9 SNL F-373 'Scope, panoramic, T149E1, Nov 54

Ord 9 SNL F-378 Mt, peris, T184 and T184E1, Jan 55

Ord 9 SNL F-382 'Scope, M93 (T153), Dec 54

Ord 9 SNL F-385 Mt, 'scope, T191, Nov 54

Ord 8 SNL F-386 Computer, ballistic, T30, Dec 54

Ord 8 SNL F-389 Indicator, az, M20, M21, M27, M31 (T24), T24E1, T25, T26, T27, T28, and K7983763, Dec 54

Ord 9 SNL G-245 Carrier, cargo, amphib, M76 (T46E1), Nov 54

Ord 9 SNL G-249 Vol 5 Winteriz equip—Winteriz kit for Trk, ambul, 3/4-t, 4x4 (SNL G-502) Trk, cargo, 3/4-ton, 4x4 (SNL G-502); Trk, cargo, 1-1/2-ton, 6x6 (SNL G-507), Dec 54

Ord 9 SNL G-249 Vol 8 Winteriz equip—Winteriz kit for Trk, cargo, 2-1/2-ton, 6x6 (COE) (GMC), Nov 54

Ord 9 SNL G-249 Vol 15 Winteriz equip—Winteriz kit for Trk, wrecker, heavy, 6-ton, M1, M1A1, Nov 54

Ord 8 SNL G-256 Tank, 120-mm gun, T43E1, Oct 54

Ord 6 SNL J-12 Spec tool sets, small arms and auto wpns, (SNL gps A, B), Oct 54

Ord 7-8 SNL J-665 Fixt, peris colli (for peris, M15A1 (7297808), Jan 55

Ord 7-8 SNL J-713 Fixt, final insp (for peris, M19 and T41) (7560189), Jan 55

Ord 7-8 SNL J-761 Mach, crnkshft, micro-finish, 230-v, 60-c, 3-ph, 86-in cap, w/24 extra abras belts (Storm-Vulcan, Inc mod 135A) (40-M-26-375), Dec 54

Ord 7-8 SNL J-763 (TO 34Y4-3-8-4) Sep, paint spray, oil and water, w/two regu (Devilbiss mod P-HR-510-1) (40-S-1556), Dec 54

Ord 7-8 SNL J-768 (TO 34F2-2-75-4) Grinder, bench, 1-hp, 110-v, D.C., wheel 10x1 in. (J. G. Blount mod 501) (40-G-144-15), Jan 55

TECHNICAL MANUALS

TM 9-2012 Cal. .30 MG M37 (tank), Dec 54

TM 9-2013 Cal. .30 MG M37 (tank), Jan 55

TM 9-3040 155-mm gun M2 and 155-mm gun mt M13 (mtd on 155-mm gun mtr crrg M40), Dec 54

TM 9-3058 (Manuscript) Cal. .50 spotting rifle M8; 106-mm rifle M40; and 106-mm rifle mt M79, Dec 54

TM 9-6017 Instru lights M10, M30, M32, M33, M36, M39C, M42, M44, M45, and T22, Dec 54

TM 9-6031 'Scopes M97 (T156) and T156E1, Dec 54

TM 9-6065 Ballistic drv M3 (T23E1), M4 (T23) T23E2 and T24, Nov 54

TM 9-6067 Range Finders M12 and T41, Dec 54

TM 9-6081-2 FCS T38 parts, spec tools, equip for maint, rebld, Nov 54

TM 9-6081-6 FCS T38—Rep and rebld of radar trkr T9, Oct 54

TM 9-6094 Directors M9, M9A1, M9A2, and M10, Dec 54

TM 9-6161 'Scope mt T191, Dec 54

TM 9-7014 120-mm gun tank T43E1, Dec 54

TM 9-8023-6 (TO 19-75AA-159) Body, aux equip for 2-1/2-ton 6x6 phone constr and maint trk V-17A/MTQ; 2-1/2-ton 6x6 earth-bore mach and pole-set trk V-18A/MTQ, Nov 54

TM 9-8631 (TO 19-75CB-18) Elect equip (Eclipse-Pioneer), Nov 54

TM-9-9050-1 1/4-in bolt cap 3/8-in sq-drive impact-type rev pneu wrench (Aro mod 7274) (40-W-1090), Nov 54

TM 9-9062-3 (TO 32B6-2-2-1) 1-1/8-in bore 4-in stroke pneu chipp hammer (Master Pneu Tool mod 4) (40-H-271), Nov 54

TM 9-9826-1 (TO 34Y6-8-1) Univ-curr 110-v combo countersink, drill, grind, and rivet brake reline mach, bench type (Star Mach & Tool Co mod 35M) (40-M-3-50); floor type (Star Machine & Tool Co mod 35S) (40-M-3), Dec 54

TM 9-9826-2 (TO 34Y6-7-1) Univ curr 110-v bench type combo countersink, drill, grind, and rivet brake reline mach (Chi Rivet and Mach Co mod LO-648) (40-M-3-50), Dec 54

TECHNICAL BULLETINS

TB 9-871A-2 (TO 19-75AB-71) 1/4-t 2-whl cargo trlr M100: Stowage box maint, O, Jan 55

TB 9-874A-3 (TO 19-75AB-89) 3/4-t 2-whl cargo trlr M101: Contami of whl beari grease, O, Jan 55

TB 9-1217-1 Cal. .45 Sub MG M3: Svcability bolt 5653429 w/o letter "H", O, Dec 54

TB 9-1819AB-3 (TO 19-75CAC-34) Hydra-Matic trans (GMC mod 302M): Remov reduct unit oil pump drive key, F, Jan 55

TB 9-1819AB-4 Hydra-Matic trans (GMC mod 302M): Chg material of gov body, F, Jan 55

TB 9-7419-1/1 Arm inf veh M75 fin dr assys, F, Jan 55

TB ORD 477 Whld vehs: Discont tire bead clips, locks, O, Dec 54

TB ORD 554 1/4-t 4x4 trk M38-series; 3/4-t 4x4 trk M37-series; 2-1/2-ton 6x6 trk M34-series; and 5-ton 6x6 trk M40-series: Remov flywh housing drain plug, O, Jan 55

TB ORD 562 Track Vehs: Appli, interchang, remov, inspect, classifi, recondit, dispos tracks, bogie, roadwhls, O, Jun 54

TB ORD 586 Petrol base hyd oils: Characteristics, uses, D, Dec 54

TB ORD 587 (TO 11W3-1-8) Fld insp and svcability standards for small arms, O.F.D, Dec 54

TB ORD 588 AOS-895-3, AO-895-4, AV-1790 series Conti eng: Carbrtr identif, O, Dec 54

TB ORD 589 Light arm car M8; arm util car M20; cargo carr M29 and M29C, 1/4-t trk M38, M170; 3/4-t trk M37, M42, M43, M152, and M201; 3/4-t 4x4 trk (Dodge), mods WC51, WC52, WC53, WC54, WC56, WC57, WC58, WC59, WC61, W/KD, W/D50B, and W/S8; 1-1/2-t 6x6 trk (Dodge), mods WC62 and WC63; 4-ton 6x6 trk (Diamond T), mods 967, 968, 968A, 968B, 968A3, 969, 969A, 969B, 970, 970A, 972, and V/8MPN-1; 4- to 5-t 4x4 trk (Autocar), mod U7144T; 4- to 5-t trk (White), mod 444T; 4- to 5-t 4x4 trk (Federal), mods 94X43A, 94X43B, and 94X43C; pow unit (Signal Corps), mods PE-95F, PE-95G, PE-95H, PE-182, PE-183A, PE 58/G, PU-26U: Instal distr point set, O, Jan 55

TB ORD 590 Reducer, flash, M2 (T2): Clarif of auth use when firing charge, propel, M4 or M4A1 in howi, 155-mm, M1 or M45 (T186E1), O, Jan 55

SUPPLY BULLETINS

SB 9-69 Reusable containers: Applica, mark, maint, D, Jan 55

SB 9-113 Return, issue of high press nitrogen cyl O,F,D, Dec 54

SB 9-115 Storage, issue of limit cap guns, hows, spare tubes, D, Jan 55

MWO's

MWO Ord A61-W9 Multi cal. .50 MG mt M45 series: Replac cal. .50 ammo chest M2 w/ ammo box tray, O, Dec 54

MWO Ord A85-W4 4.2-in mortar mt M24 (T61): Replace magnes baseplate assy w/steel baseplate assy; chang mod desig to 4.2-in mortar mt M24A1, F, Dec 54

A86-W1 Weapn tripod mount M74: Facilitat mntg, dismnt weapon, F, Dec 54

C20-W31 75-mm pack how crrg M8: Salvag upper elev gear case install bushing, F, Jan 55

C21-W21 105-mm how M2A1, crrg M2A1, M2A2: Provid overall cover M115A1 w/pocket, fit scope mnt, F, Dec 54

C39-W15 155-mm how M1, M1A1: Improv hammer, relocat lanyard lug, F, Dec 54

C67-W1 4.5-inch mltpl rkt lnchs T66E3, T66E4: Modify yoke frame assy, F, Dec 54

C77-W2 105-mm rifles M27, M27A1: Relocat brchblk opr lvr assy, F, Dec 54

D24-W26 155-mm guns M2, M2A1: (See C-39-W15, above)

D29-W20 8-in how M2, M2A1: (See C-39-W15, above)

D31-W38 240-mm how M1: (See C-39-W15, above)

D33-W38 8-in gun M1: (See C-39-W15, above)

F207-W19 Remote cntrl sys M12A1: Replac tgl swth on gun jnctn bx assy prev water seep from protect seal deterioration, F, Dec 54

MWO Ord F365-W1 Superel trans T13: Conversion of superel trnsm T13 to M22, F, Jan 55

MWO Ord G1-W58 M46, M46A1, M47, M48, T67 Tanks: Reinf oil cooler assy to reduce vibra, F, Dec 54

MWO Ord G260-W6 Track arm inf veh M75 (T18E1): Reinf of intern hull struct person compart floor plates, F, Dec 54

MWO Ord G260-W16 Track arm inf veh M75 (T18E1): Instal new eng frame sup pins; prev engine jack shaft screws from bend, break; elim muff and tail pipe fail; instal new oil level gage; instal new exhst manif cover; prevent lower front hull door cap-screws shearing, F, Dec 54

MWO Ord G262-W20 M47 tank: Instal air blower sys for peris T35, F, Dec 54

MWO Ord G742-W19 2-1/2-t 6x6 trk chassis M44, M45, M46; 2-1/2-t 6x6 cargo trks M34, M35; 2-1/2-t 6x6 crane trk M108; 2-1/2-t 6x6 dump trks M47, M59; 2-1/2-t 6x6 earth bore mach, pole set trk V-18A/MTQ (Sig Corps); 2-1/2-t 6x6 shop van trk M109; 2-1/2-t 6x6 water tank trk M50; 2-1/2-t 6x6 phone constr maint trk V-17A/MTQ (Sig Corps); 2-1/2-t 6x6 tract trk M48: Instal special muff, O, Dec 54

MWO Ord G749-W19 2-1/2-t 6x6 trks M135, M211; Dump trk M215; gas tank M217; shop van trk M220; trk tract M221; water tank trk M222: modif reverse center gear thrust washer, instal new oil press test gage hole plug in trans case, F, Dec 54

MWO Ord G754-W4 1-1/2-t 2-whl cargo trlr M104; 1-1/2-t 2-whl water tank trlr M106: Reinf caster fork, mtg brkts, F, Jan 55

LUBE ORDERS

LO 9-785 Tractor hs 18-t, M4, M4A1, M4A1C, M4C, Nov 54

LO 9-786 Tractor hs 13-ton, M5, M5A1, M5A2, M5A3 (IHC), Dec 54

LO 9-788 Tractor, hs 38-ton, M6, Nov 54

LO 9-3066 Trlr, rckt 762-mm, XM329, Nov 54

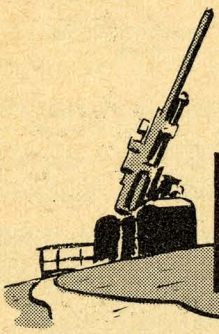
LO 9-7004 How, 155-mm sp M44 (T194), Nov 54

LO 9-7414 Arm car, light, M8; car, arm, util, M20, Dec 54

NOTE—On TB's, SB's and MWO's:
O—Organizational Maintenance
F—Field Maintenance
D—Depot Maintenance

Here're a few more—

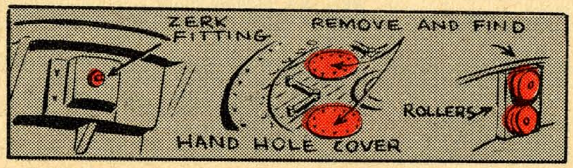
HANDY TIPS FOR YOUR



Here are a few handy tips that popped up, that could make life a little easier for you shooters around the AAA sites.

ONE FITTING FOR TWO — They're six pairs of support rollers in your acquisition-antenna drive-unit that need your support—with grease.

Each pair of these roller bearings are fed from one zerk fitting . When you give them your quarterly grease job you've got to check them by feel to make sure both rollers have their share of grease.



Before you start your feeling around, *make sure the antenna safety-switch is off.* It would also be good to use a guy rope on each end of the radome with a couple of men holding on each rope to steady the radome. If someone in the operational trailer would start that radome going around, or a gust of wind started it, you could lose a finger or two —play safe.

Start your check by taking off one of the three hand-hole covers on top of the drive. Turn the drive table until the hole's over one of the six pairs of rollers. Put your hand in the big hole and use one of your fingers to find the little hole in the turntable casting. When you get your middle finger thru the hole, feel the upper roller while grease is being shot through the zerk fitting. Soon's you feel grease coming thru the roller—that's enough. To check the lower roller, get your hand below the turntable track—and do the same kind of greasing by feel.

Remember the acq safety-switch and the guy ropes on the radome.

TOOL HOUSES— Baker Battery men of the 602nd Bn have built a 4-part tool house to stow the tools for their guns in the battery circle. The thing that they are real proud of is that these tool sheds are big enough to have a nice tool rack on the wall, with hooks and tool outlines. Also, the crews can walk in to pick up what they need. They don't have to crawl into a kennel sized to a year-old pup-dog (Fig 1).

Fig 1

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HANDY TIPS FOR YOUR AAA SITES

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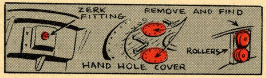

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Fig 1

JUNCTION BOX SHELTER— The boys at Baker Battery also have built a little shelter over their junction box. Keeps off the rain and the sunlight, neither one of which helps the box any (Fig 2).

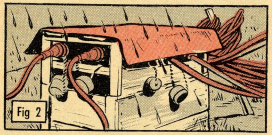
Fig 2

BATTERY CONTROL CABLES— These same boys have another idea—to keep their brake-control cable dry and free of corrosion, they have cut a tight circular gasket out of inner tube and mounted it under the attaching bolts for the dummy receptacle like in (Fig 3).

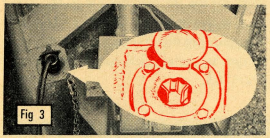
Fig 3

SIDE-SHIELD SAFETY-CHAIN— Any of you who have been clouted ahindside the ear by the swinging side-shield whilst working your leveling jacks will appreciate this chain that Able Battery has rigged up. It snaps into the shield-lifting-ring to hold it forward while you're in behind it, and when not in use, it stows out of the way (Figs 4 and 5).

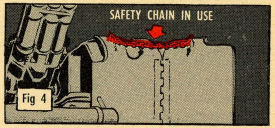

Fig 4

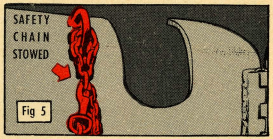

Fig 5

UER's— Make use of those UER's—if you find anything that's not working like it should, or rain water settling in various parts—make out UER's (DA form 468) and send them in so those deficiencies can be corrected.

AAA SITES

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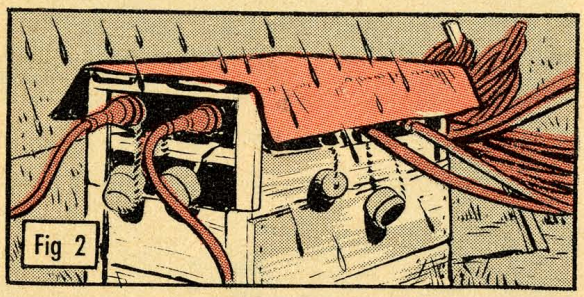

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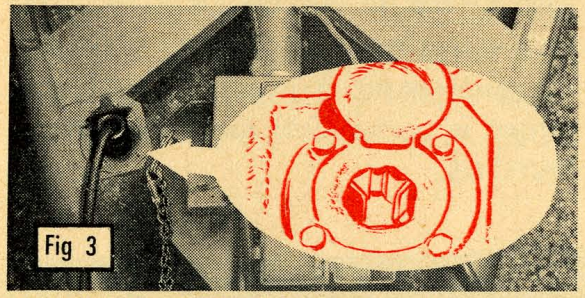

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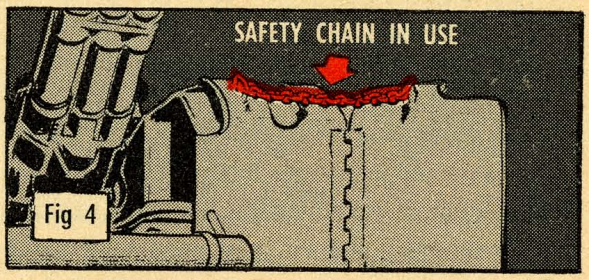

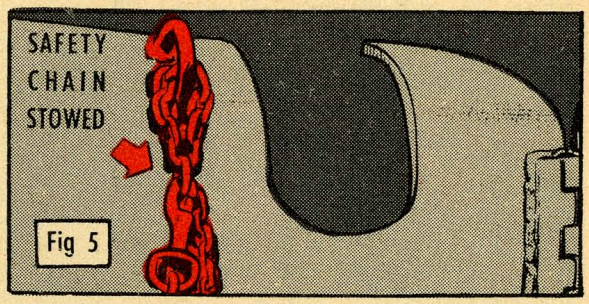

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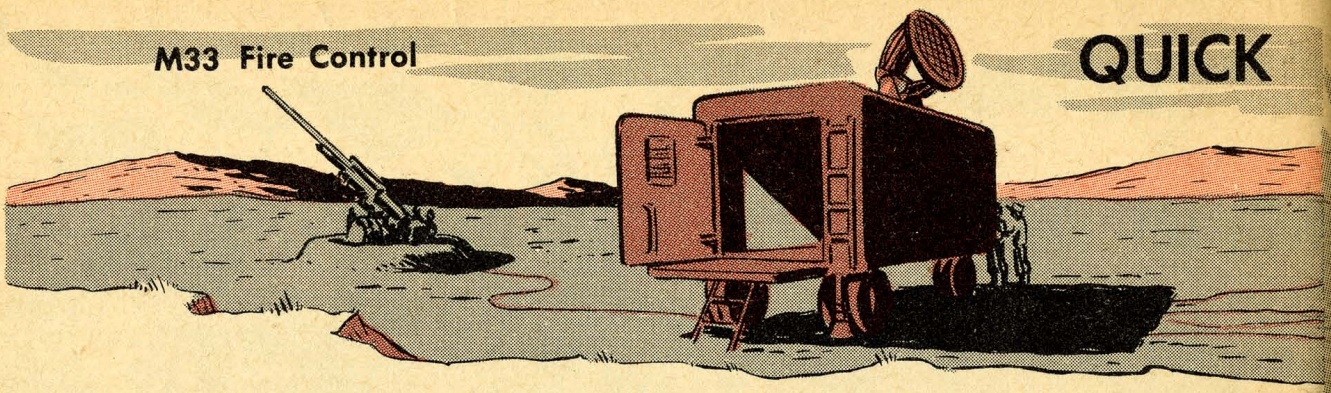
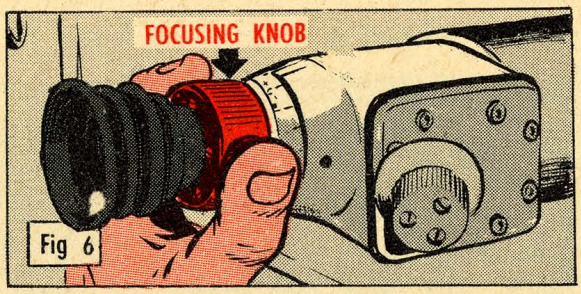
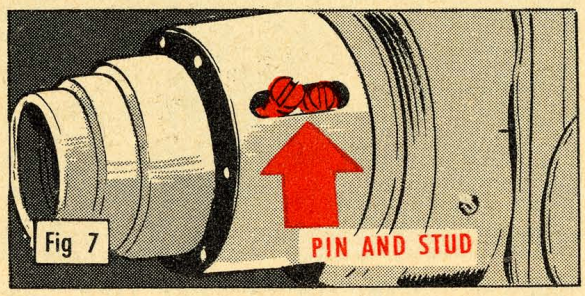


TAKES A LIGHT TOUCH

Turning the focusing knob on the eyepiece of your M33 FCS's M34 tracking periscope (Fig 6) takes only a light touch.



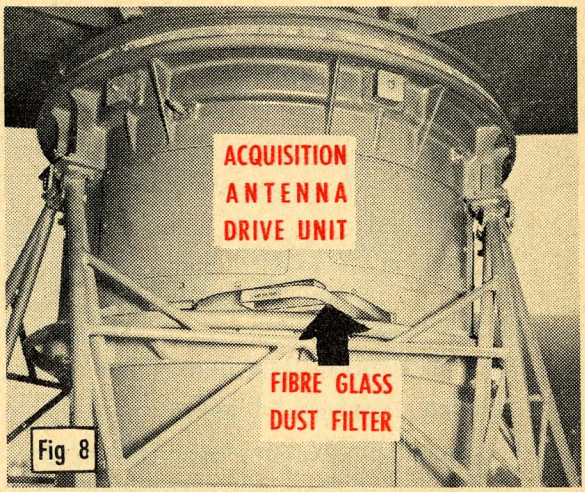
Under the knob is a pin and stud (Fig 2) which act as stops. Turning



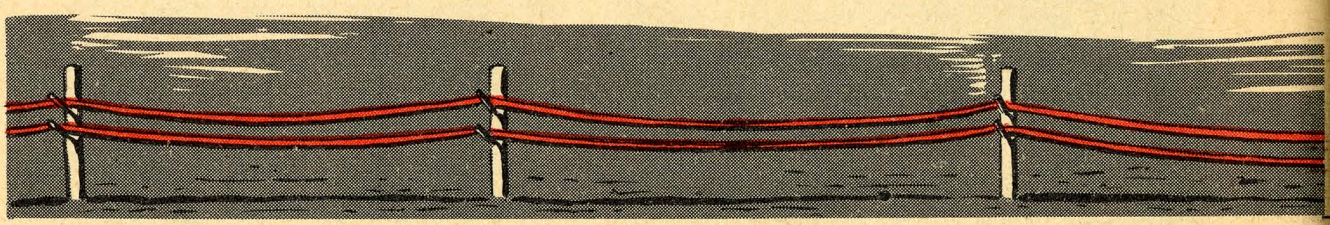
it with brute force or forcing it beyond its travel limit will shear off the pin and stud—and put you out of the picture. Take it easy.

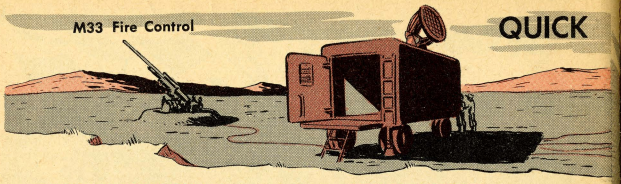
HIDDEN AIR-FILTER

You've got a fibre-glass dust-filter at the base of your M33's acquisition-antenna drive-unit (Fig 8) and it needs to be looked at often.



When the antenna's completely assembled the filter can't be seen. As a result, it's not checked and replaced. The filter cleans the cooling air to the drive motor and when it becomes dirty and clogged—no air. You need to replace it. Order it under Ord Stock No. F342-7605703.





QUICK TRICKS

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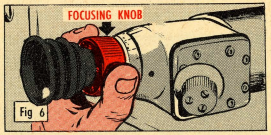

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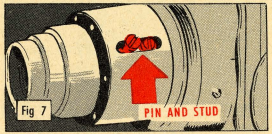

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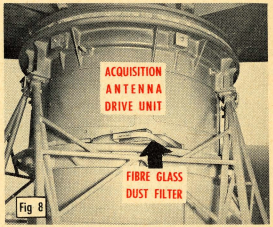

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A LITTLE GREASE

When you're giving your M33 outfit its periodic lubing according to LO 9-679, give the unpainted outside parts of the system a check for possible corrosion spots. Clean any spots you find and lube to keep corrosion from starting.

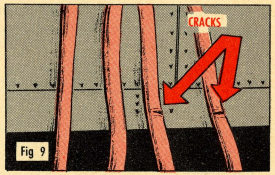
Another good idea is to coat the bolt threads on both the acquisition and track antennas that're out in the open with heavy grease. GAA (Ord Stock No. 14-G-623-50), or Grease GL (Ord Stock No. 14-G-611-10) will do the trick.

And hit the outside door hinges with a few drops of oil to keep the hinge pins free of squeaks and rust.

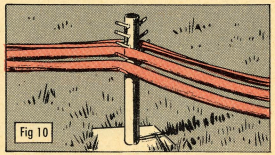
SMOOTH CURVES ARE BEST

Sheathing on the M33 multi-conductor cables and gun cable systems will crack, especially at sharp bends, when they're out in the wide open spaces (Fig 9).

When you're setting up your M33 system, smooth all the sharp bends in

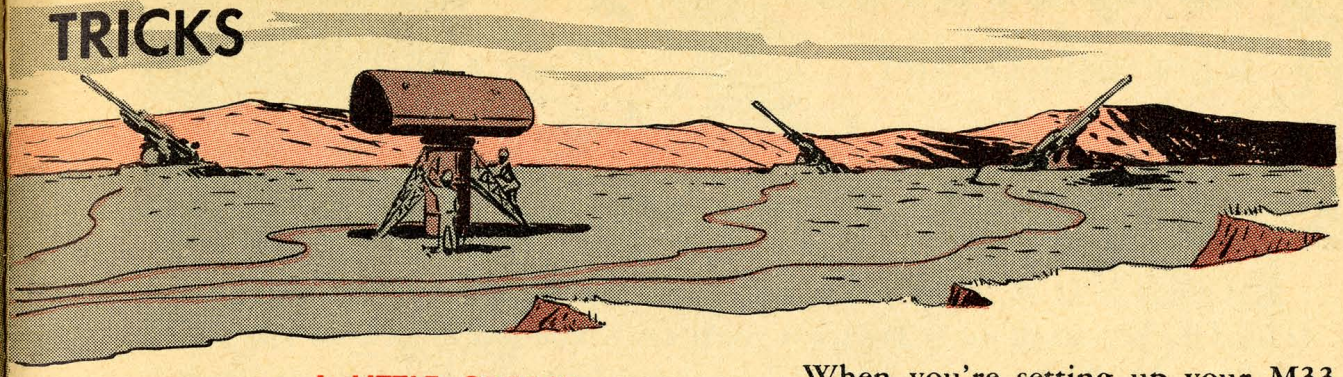


the cables into smooth curves (Fig 10). Smooth curves not only look better but give longer, lasting satisfaction.



When you find a cable that's cracked down to the cord insulation, be sure and report it to your Ordnance support unit for repair or replacement.

TRICKS



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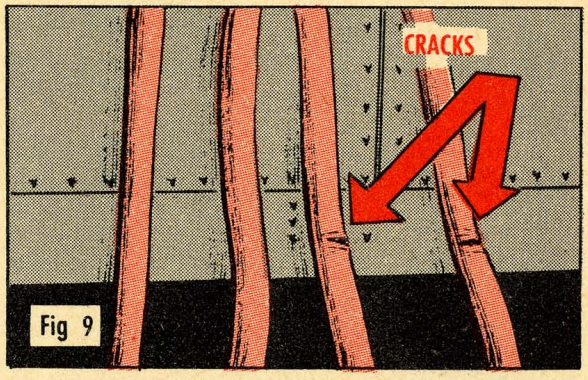
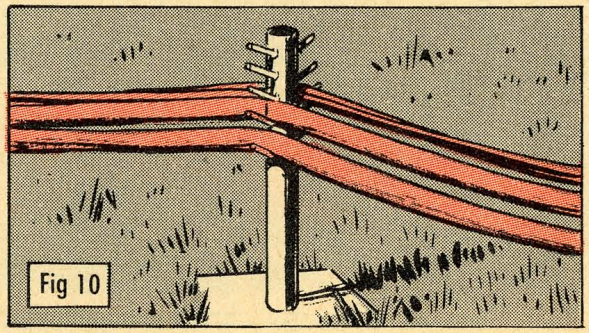
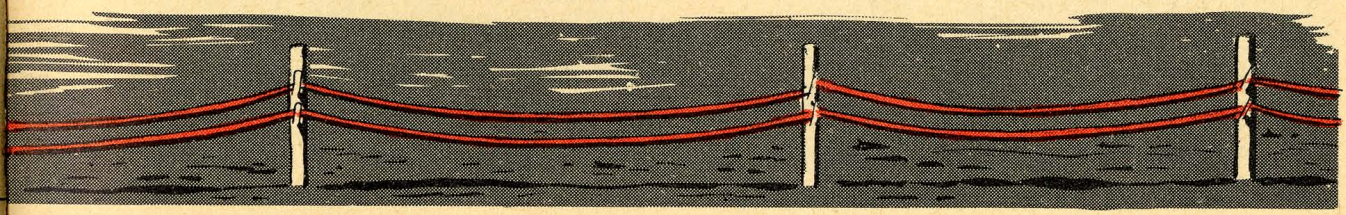
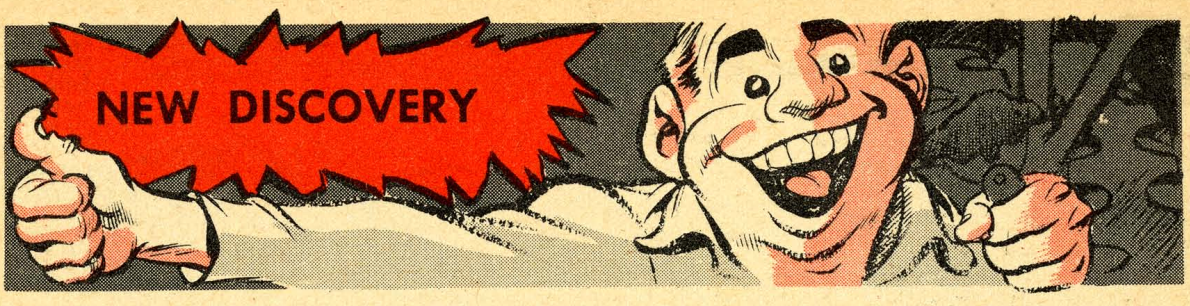


the cables into smooth curves (Fig10). Smooth curves not only look better but give longer, lasting satisfaction.



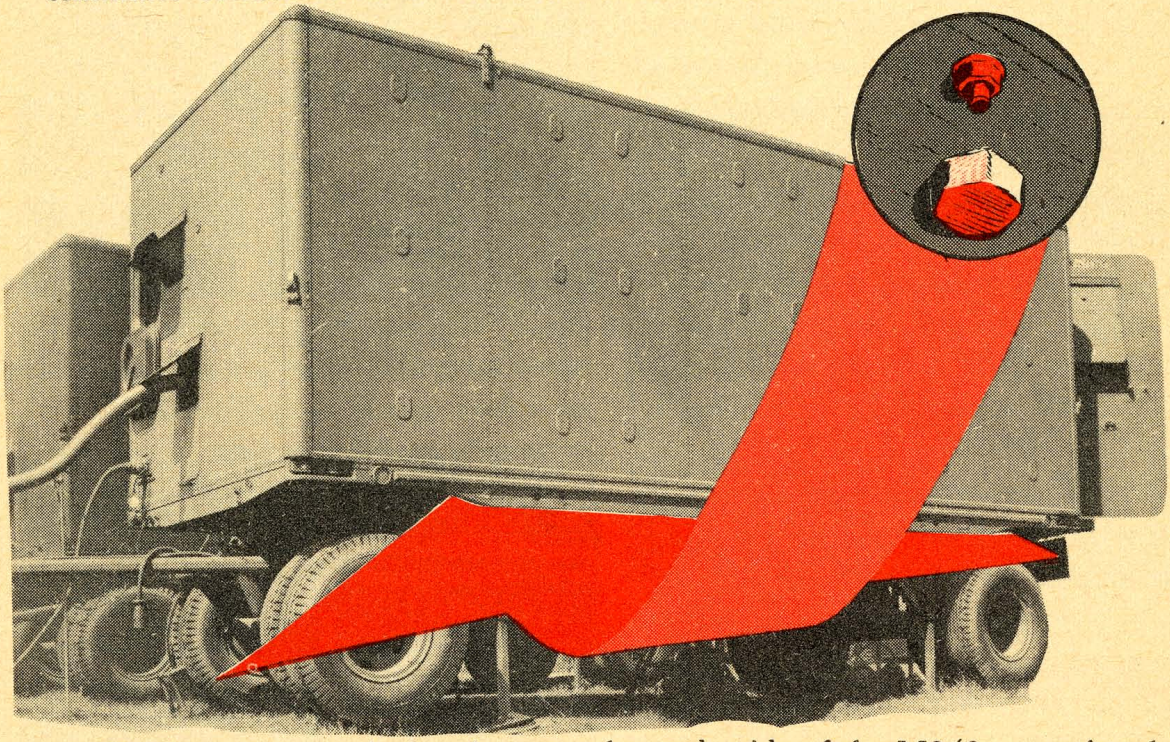
When you find a cable that's cracked down to the cord insulation, be sure and report it to your Ordnance support unit for repair or replacement.



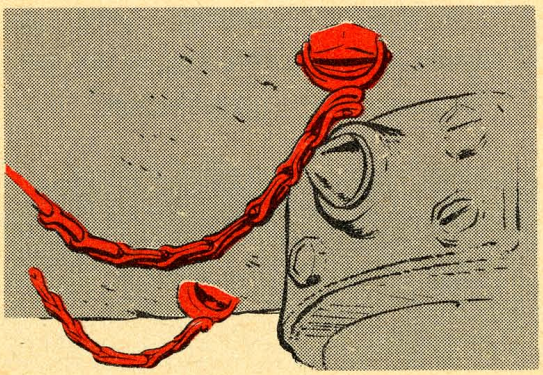


Have you M33 FCS men found out about the 13 drain plugs located around the bottom of the M244 spare parts van? You might have to scrape off the asphalt undercoating to find them. Your best bet is to look underneath the van where the seams run down the side.

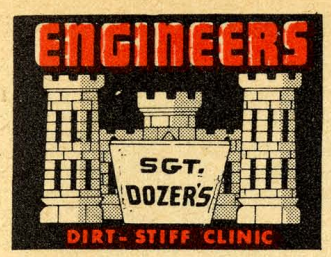
You ought to open these plugs once a month for at least an hour. This'll eliminate condensation between the walls of the van.



You've also got drain plugs on the underside of the M242 operational van —two under each corner.

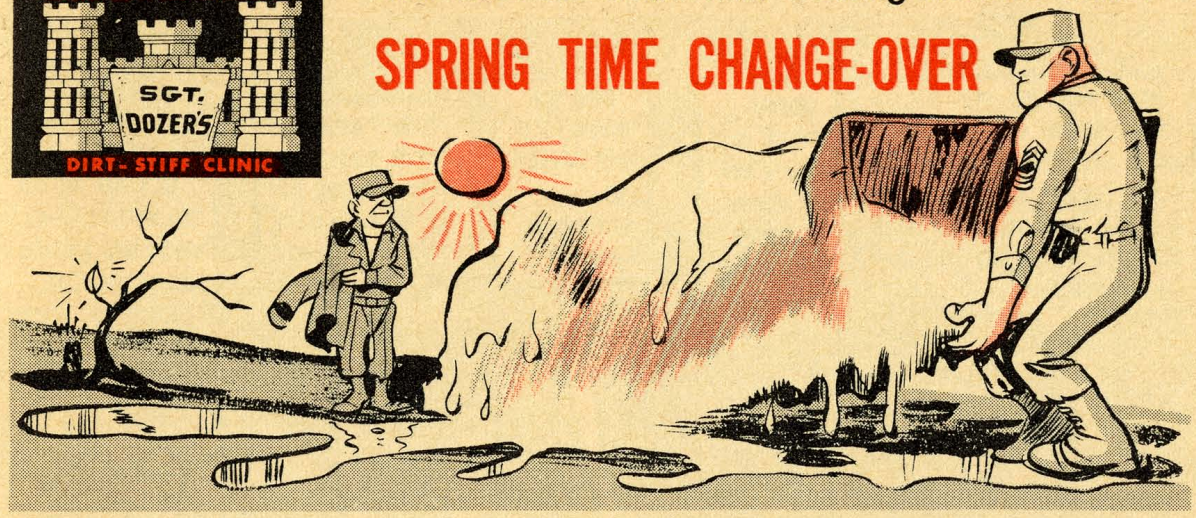


While you're checkin' for plugs on those M242's, take a gander at the seams running vertically on the sides of the van. If there's a trace of any corrosion running out of the bottom of the seam, get a UER in on that van right away. That defect'll get priority treatment.



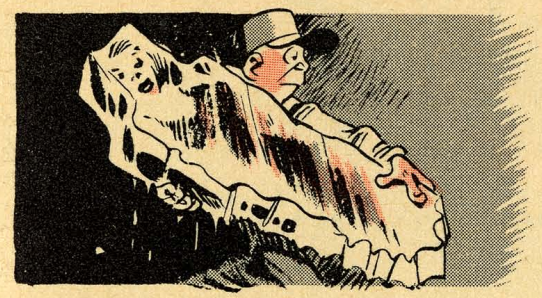
How does she stand after bucking the cold blasts?

SPRING TIME CHANGE-OVER

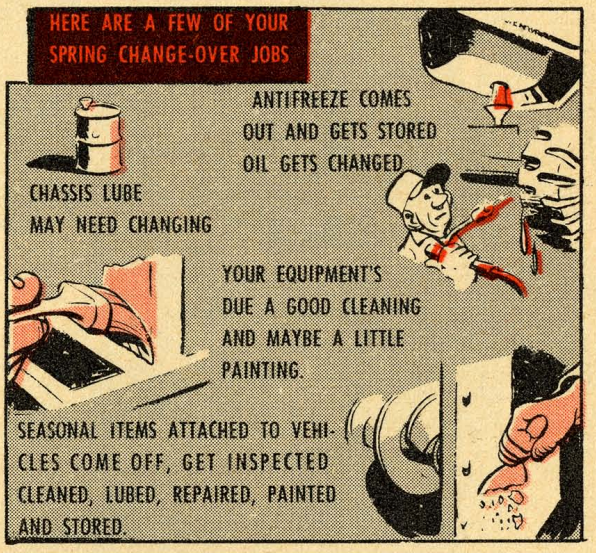


S-u-r-e, you've been faithful to your Engineer equipment all winter long, but now's no time to take anything for granted. Bet you didn't miss a thing on the daily, weekly, monthly and hour-meter checks . . . not on purpose anyway. Nobody would.

But just in case something did slip by unchecked, spring-time change-over's a good time to give your piece a thorough going over. Give it the works. This includes lubrication, lights, batteries, tires, tubes, cable connections, nuts and bolts. Check and take care of everything you're responsible for and report other problems to the shop.

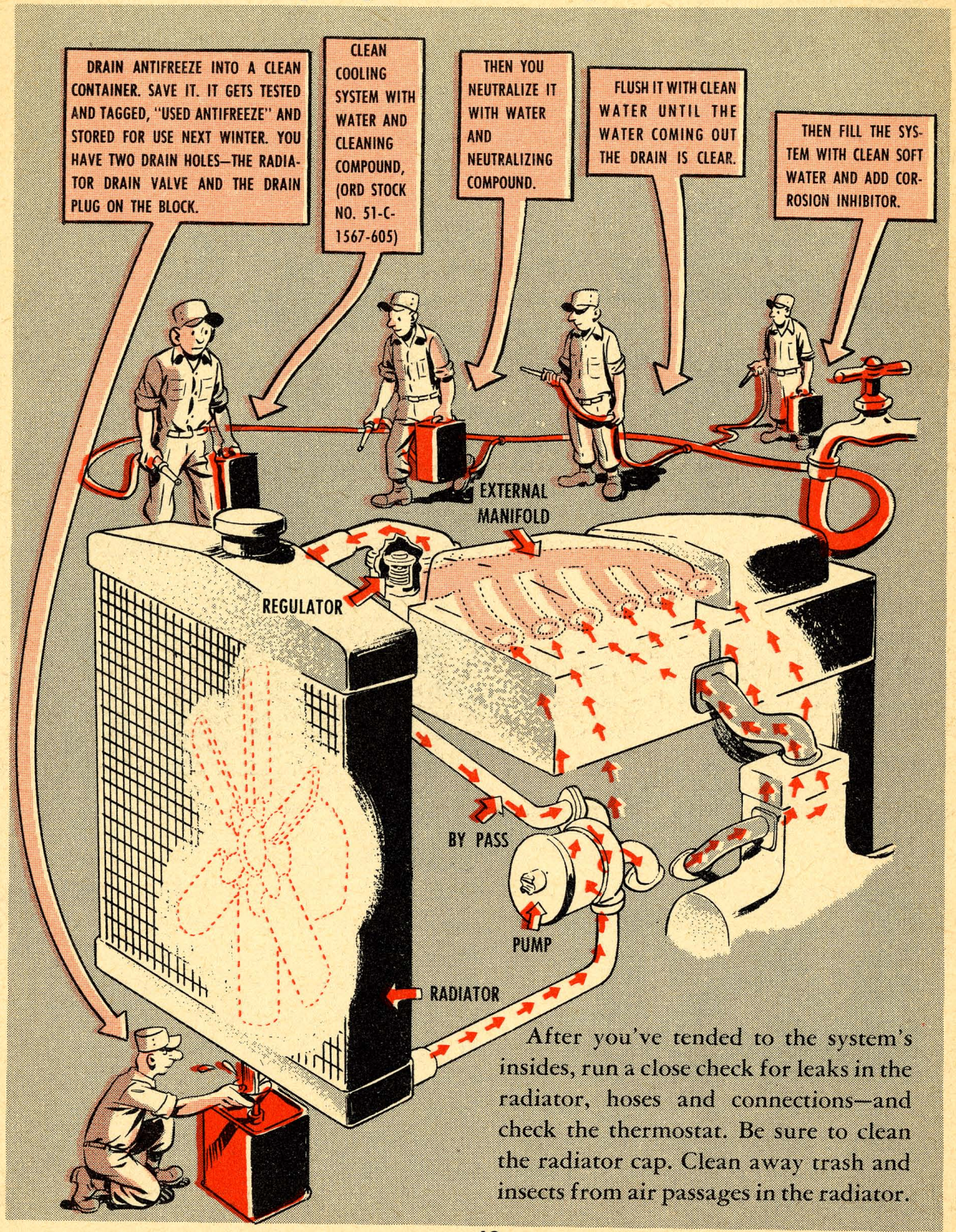


And it's not a bit too early to start getting the seasonal change-over chores written off the books, so reach for those TM's and LO's.



TO KEEP 'ER COOL—Cleaning the cooling system is one of the biggest jobs, and it should be done soon's all danger of freezing weather's past. Of course, the exact date for taking out the antifreeze usually comes to you from higher up, so you needn't take any chances by draining it on your own. But regardless of when you drain it, when the antifreeze comes out, the entire cooling system is ready for a complete cleaning job. So, put your equipment on level ground and proceed like it says in your manual under "Cooling System."

Actually, you put the cooling system through five fill-and-drain steps to get its innards in top shape for the summer pull:



After you've tended to the system's insides, run a close check for leaks in the radiator, hoses and connections—and check the thermostat. Be sure to clean the radiator cap. Clean away trash and insects from air passages in the radiator.

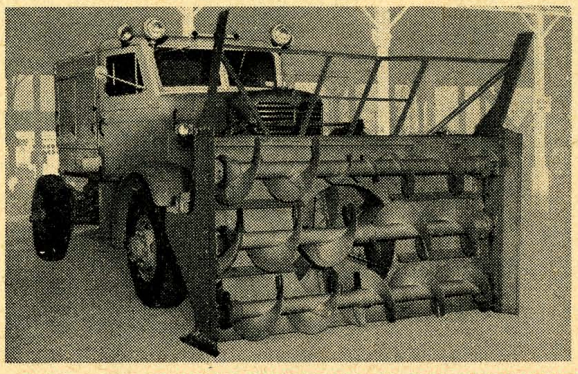
NOW—THE LUBE—The lubing change-over may be less involved, but it's by no means less important. So grab your equipment's LO and follow it to the letter. You may only have to drain, flush and refill with the same grade of oil—or you may have to drain, flush and go to heavier grade lubes. The LO'll guide you. Of course, on chassis lube points you stick with GAA all year long . . . if GAA's what you're using. If you're using CG, look to the LO for the chassis grease you're to put in. Then you clean the lube points as usual and put in fresh GAA or CG.

CLEANING, CARE AND TIGHTENING—Take the broom, a bucket of water and suds, solvent or steam, and clean your equipment inside and out like it says in the TM. You'll be repaid with better operation this summer when hot weather sets in.

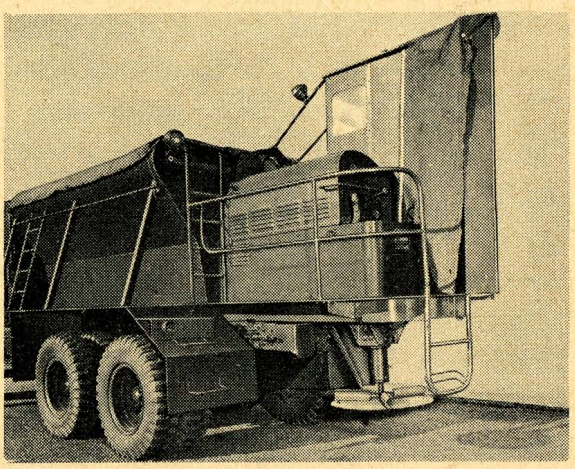
THOSE SEASONAL ATTACHMENTS—If you've got trucks or tractors with snow-removal or sand and cinder spreading attachments, take off the seasonal equipment and be sure the mounting pins, bolts, brackets and push poles stay with the snow plow, blade or spreader they belong to.

All attachments have to get inspected, repaired, cleaned, painted and lubed before they're stored for the summer. Also, remember to tag each piece with its proper nomenclature. Tell what before-storage maintenance you gave it and what type of vehicle the attachment's for.

SEASONAL EQUIPMENT—Seasonal equipment (like the Rotary Sno-Go, 7-1/2-ton, 4x4 snow plow, or truck-mounted sand distributors) gets a final technical inspection after the last job of the season. **All** needed repairs are taken care of, and the equipment gets cleaned, lubed and painted before it's ready for summer storage.



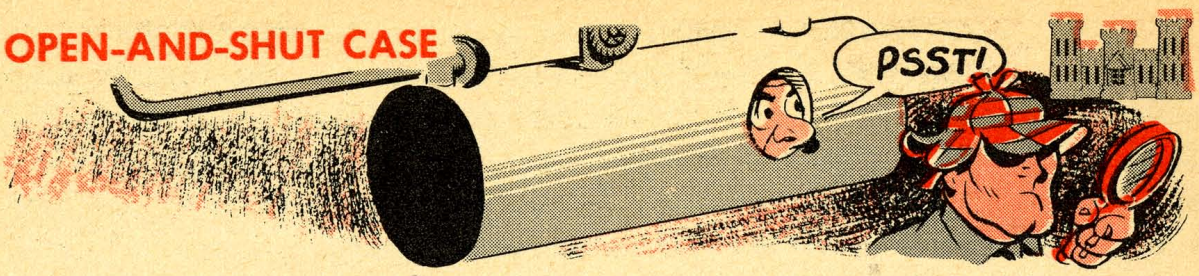
FRONT VIEW OF SNOGO SNOW REMOVAL EQUIPMENT (MADE BY KLAUER MFGR).



CINDER SPREADER, FEDERAL TRUCK, MADE BY UNIVERYOR-SAUGHMAN MFG CO. IT HAS A 5-TON HOPPER (COAL BODY, SELF UNLOADING AND THE SPREADER ATTACHMENT IS HOME MADE.)

Once seasonal items are tagged for limited storage, they're inspected and maintained like it says in SR 750-305-20 (28 Dec 53) "Limited (Temporary) Storage of Corps of Engineer Materiel." And TM 5-9715 "Preparation of Engineer Equipment for Storage" is also handy to have around when you're getting your equipment ready for storage.

OPEN-AND-SHUT CASE



Man, those air-conditioning units you use to cool the M33 vans at AAA sites can give you lots of service—if you operate 'em right.

You can get into trouble right at the start—and we mean when you start. You see, on the Ready-Power kind, you gotta open the condenser valve, then the liquid valve, before starting. If you don't, you're headed for a fit of temper and possible trouble. You have to open those valves to allow your liquid refrigerant to circulate in the cooling system.

The valves are located just above the liquid receiver (Fig 1). To open 'em, you just turn 'em as far as they'll go in a counter-clockwise motion—just screw 'em out.

If these valves aren't open, the unit won't run. When that liquid valve's closed, the pressure builds up inside and automatically cuts off the engine. If you didn't know what's wrong you might keep pressing the starter button, trying to turn the engine over. First thing you know, you've got a dead battery—all because the valves weren't open.

That's not all, either. There's always a chance that the safety switch won't turn the engine off when the valve is closed. As a result, the pressure'll continue to build up and eventually blow the seals on the refrigerator unit itself. Then you've got real troubles and a big repair job.

To make it an open-and-shut case, be sure and close the valves when you stop the unit. But you close 'em in reverse order. First the liquid valve and then the condenser valve. Remember . . . be sure and shut the valves **before** turning off the ignition.

If you've got a Reco model, you only have one valve to worry about. That's the liquid valve and it's located on the control panel.

And on the Typhoon model, you don't have to worry about either one of the valves. It's all automatic.

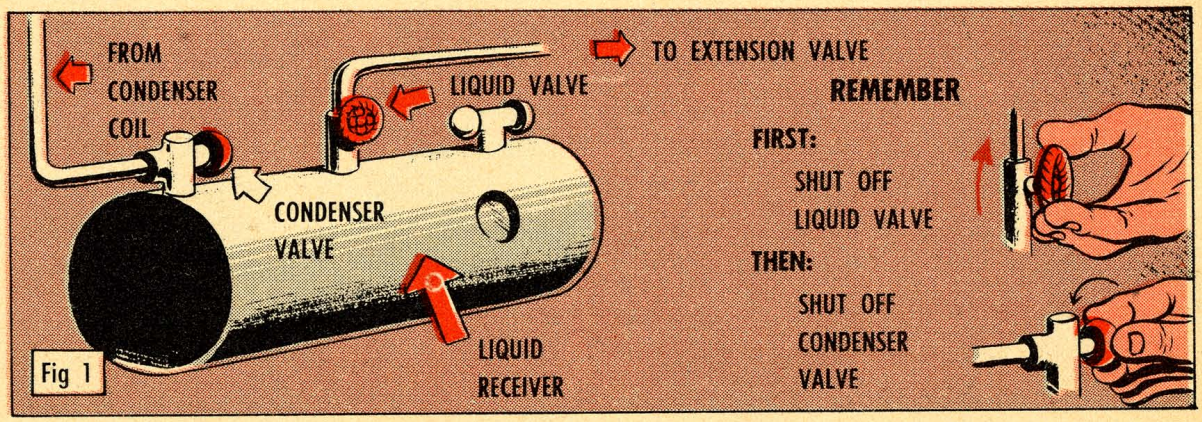
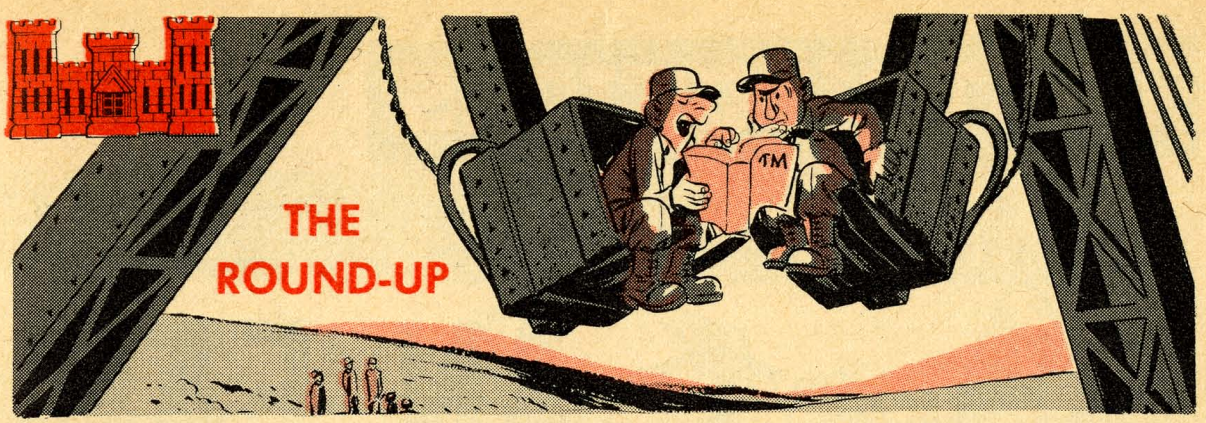


Fig 1



THE ROUND-UP

TM's

5-271, Lt strm crossing equip., 21 Oct 54

5-9223, Trlr, full low bed, Rogers mod D-60-D-S-7, 8 Nov 54

5-4255, Saw, rail cutting, Racine mod 15, 29 Oct 54

5-5073, Gen set, Homelite mod 24A120-23, 2 Nov 54

5-5335, Gen set, Intnl Dsl Q-2471 (Sig Corps Des PE220 A & B, 1 Nov 54

5-9467, Air Cond Unit, Ready Power mod, 13 Sep 54

5-727, Eng hand tools, 19 Oct 54

5-5008, Gen set, Sheppard mod 12DD, 5 Sep 54

5-5221, Engine, gasoline, 5 Oct 54

TM5-1023,Dryer, agg, Std Stl Type, CJ1 mod 4131, 5 Nov 54

TM5-1081, Tank, asph, 1,550-gal, Vic mod 72, 18 Nov 54

TM5-1149, Dist, Wtr, 1,000-gal., Municipal Supply Co., mod WD-1000, 17 Nov 54

TM5-2015, Pump, cent, 500-GPM, Barnes mod Marvel 40 M, 7 Dec 54

TM5-3300-1,Tractor, Whl-type, MRS mod 125, 3 Nov 54

TM5-4092, Breaker, paving, Chicago mod CP-115, 16 Nov 54

TM5-4153, Tamper, backfill, Hardsocg mod BT-32, 24 Nov 54

TM-5045, Digger, clay, Hardscog mod CO-25, 23 Nov 54

TM-5076, Gen Set, 5KW, US Mtrs mod 5-US-10285-A, 4 Nov 54

TM5-5345, Comp, Air, 16-CFM American Brake-shoe mod GE 229XP, 29 Nov 54

TM5-5365, Chrgr Batt, Cont Mtrs mod L-244 "Tiny Tim", 23 Nov 54

TM5-9520-2, Crane-Shvl, Power Ut, Wayne mod 40, 13 Dec 54

TM5-9455, Carrier, Crane-Shvl, Available Trk mod 1014CE, 22 Nov 54

TM5-9550, Roller, Mine Clrg, tank mtd, hvy (Roller High Herman), 17 Nov 54

TM5-9578, Electromagnet, Rd, trlr mtd, Stearns mods 18" x 36" & 20" x 72", 17 Nov 54

TM5-9686, Crane, revlvg, trctr mntg, Cardwell mod C, 16 Nov 54

TB's

5-1064-1, Roller, road, Shovel Supply mod RF100-CE, 5 Nov 54

5-4006-1, Saw, recip, woodwdg, pneu, Wright AS-221, 1 Nov 54

5-9093-1, Converter, oxygen, Air Products mod, 4 Nov 54

TB5-2123-1, Pump, stm drn American Marsh mod, 17 Dec 54

TB5-3307-1, Tractor, whl type, Caterpillar mod DW 20-M, 23 Nov 54

TB5-3510-1, Truck, fire, FWD Auto mod FR50T, 12 Nov 54

TB5-4096-1, Drill pneu, Chicago Pneu mod D, 21 Dec 54

TB5-4123-1, Mach, concrete vib block, Gen'l Engine Co. T6-100 Super Twin, 30 Nov 54

TB5-5084-1, Gen Set, elec, Onan mod CWC4-5S, 15 Nov 54

TB5-5325-1, Gen Set, elec, Atlas Aircraft mod 7A1, 21 Dec 54

TB5-5338-1, Comp, air, 6-CFM,American Brake-shoe mod GE-320, 21 Dec 54

TB5-5350-1, Comp, air, 20-CFM American Brakeshoe mod B-331-B, 8 Dec 54

TB5-5359-1, Gen Set, elec, 5KW, Onan 5 JWC-1-E/270A, 6 Dec 54

TB5-9157-1, Drive Unit, tramway or cableway, GED, Blue Island mod 2, 5 Nov 54

TB5-9497-1, Carrier, crane-shvl, Available Truck mod HC-70X, 5 Nov 54

TB5-9501-1, Carrier, crane-shvl, Coleman mod G-55A, 5 Nov 54

LO's

5-5350, Comp, air, American Brake Shoe mod B-331-B, 28 Oct 54

5-5388, Gen set, Homelite mod 23A115-4, 16 Sep 54

5-5382, Gen set, Homelite mod 24AD120-23, 5 Oct 54

5-5389, Comp, air, Harris mod 53-101, 20 Sep 54

5-9173, Hoist, gas-driven, Underwood models M-1 & M-2, 25 Oct 54

5-278, Mtr, outboard, Johnson POLR-15 & Evinrude 8008, 2 Oct 54

LO 5-6007, Camera, Copying, Rutherford mod MAC, 18 Nov 54

LO 5-1118, Loader, agg, Barber-Greene mod 82-AM, 4 Nov 54

LO 5-1159, Crane-Shvl, revlvng, Whl Mtd, Koehring mod 205-WC, 30 Nov 54

LO 5-1185, Roller, Road, Cont mod F-244, 1 Dec 54

LO 5-1222, Angledozer, Berg mod CB-500C, 7 Dec 54

LO 5-1248, Crusher, roll type, screen & washer, Pioneer mod, 16 Nov 54

LO 5-1250, Crusher, roll type, Pioneer mod 42-VA, 22 Oct 54

LO 5-1370, Plow, snow, V-blade, truck Mtg, William Bros mod 37-PR-188, 20 Oct 54

LO 5-1492, Roller, road, dsl, Galion mod "Tandem", 3 Nov 54

LO 5-2022, Pump, Cent, 55GPM, Jaeger, Carver or Red Jacket mod 2 APS-1, 2 Dec 54

LO 5-2114, Pump, Cent, Reiner mod GP-55, 29 Nov 54

LO 5-4096, Drill, pneu, Chicago Pneu Type 327-425-3 mod D, 15 Dec 54

LO 5-4123, Machine, concrete vibrator, blk, General Engine Co. Series Super Twin, 7 Dec 54

LO 5-9093, Conv, oxygen, liquid to gas, Air products mod, 7 Dec 54

LO 5-9311, Winch, tractor mtg, Berg mod CB-3, 29 Nov 54

LO 5-9335, Sprayer, paint, DeVilbiss mod PNM-616, 21 Sep 54

LO 5-9507-4, Crane-Shvl, truck Mtd Bay City mod 180-T66. 1 Dec 54

MWO's

ENG 9226-1, Dolly, 4-wheel, 25 ton, all makes & models, 1 Nov 54

ENG-1034-1, Mixer, rtry tiller, Seaman mod MHD-72, 21 Dec 54

ENG-1060-2, Roller, road, sheepsfoot, 2 & 3 drums LeTourneau W-2 & W-3, 21 Dec 54

ENG-1088-1, Plow, bottom, towed type, John Deere mod 7, 21 Dec 54

ENG-5006-4, Gen Set, elec, Intnl-Fermont M30GCT-SH6, 2 Dec 54

ENG-9582-1, Pile drivers and extractors, McKiernan-Terry mods, 6 Dec 54

TB ENG 152, Clip, triple-spring, camouflage, armored Vehicle, for gun barrels, 21 Dec 54

TB ENG 153, Bracket, camouflage, armored vehicle, for natural garnishing, 23 Dec 54

TB ENG 164, Replace idler gear spindles on Waukesha Engine mods 130, 140, 145 and 148, 29 Nov 54

TB ENG 166, Matched bearing set on LeTourneau—Westinghouse Co., equipment, 29 Nov 54

ENG 7 & 8's

9074, Trlr, 2-whl, util pole 2½ ton, all makes & models, 14 Oct 54

9459, Air Cond Unit, Chrysler Airtemp mod 5-SCA-M, 19 Oct 54

4146, Press, hyd, Blackhawk mod S-71, 5 Oct 54

ENG 7 & 8-4015, Saw, chain, Mall mod 7H, 8 Nov 54

ENG 7 & 8-9220, Semi-trlr, low bed, 20-ton All makes and mods, 7 Dec 54

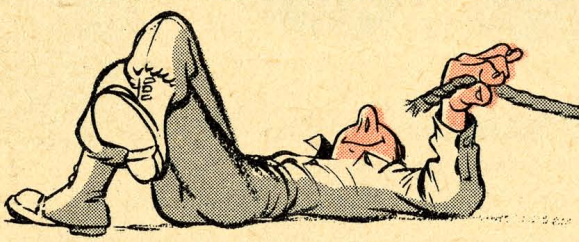
ENG 7 & 8-5315, Gen Set, elec Buda mod DA60A3-CE, 10 Nov 54

SR

310-20-25, C-1, Index of Supply Manuals, Corps of Engineers, 8 Oct 54

CONTRIBUTIONS

Reo Universal-Joint Oil-Seal Puller

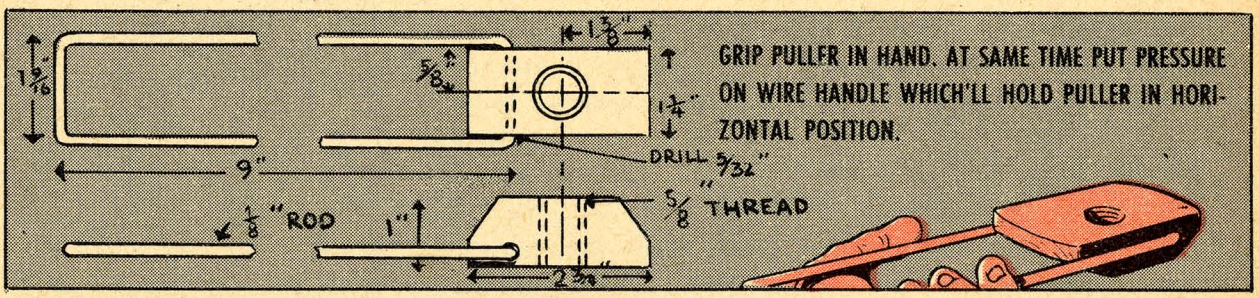


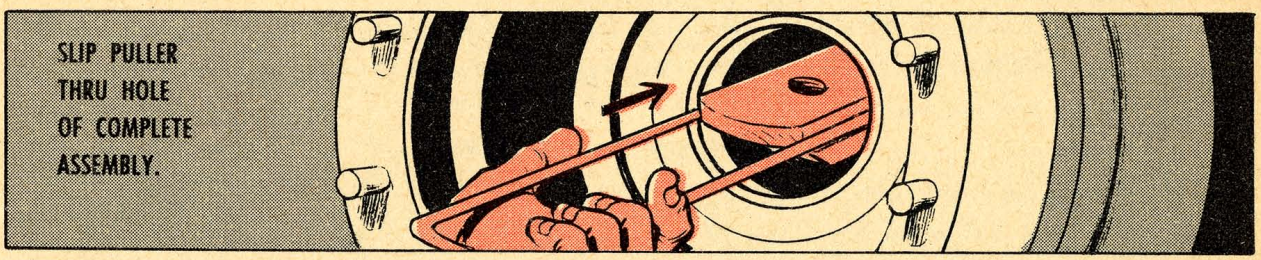
AN EASY

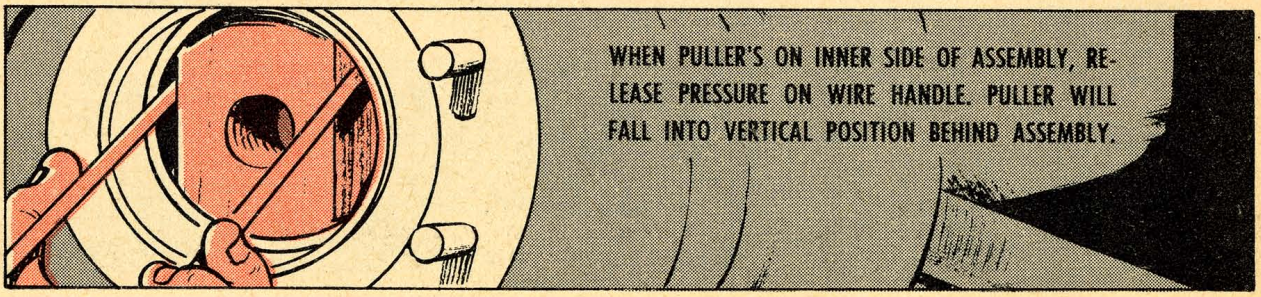
Dear Editor,

We've had a time removing the universal-joint oil-seals (old Ord Stock No. G742-7521789 or new Ord Stock No. H013-0500768) from the front-axle assembly of our M34 and M35 trucks. The seal is behind a retainer and the universal-joint spacer. These three items are installed in the housing as an assembly (Ord Stock No. G742-7521788).

We now have a puller that takes the assembly out with ease and doesn't damage it.







CONTRIBUTIONS

Reo Universal-Joint Oil-Seal Puller

AN EASY OUT

Dear Editor,

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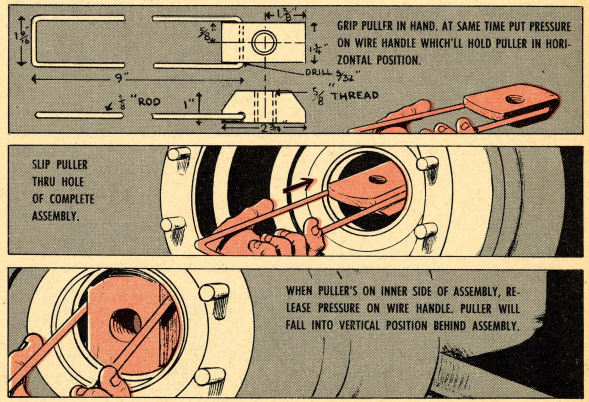

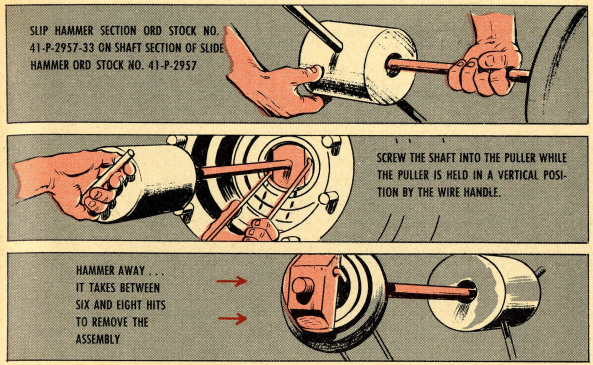

We used the heavier hammer because the lighter hammer on the puller Ord Stock No. 41-P-2957 wouldn't budge the assembly.

CWO H. E. Thayer
Aberdeen Proving Ground, Maryland

(Ed Note—Good deal. But when putting that assembly back in, use a 2-lb ball-peen hammer and a brass drift. Drive the seal side end in first and seat it fully in the housing. If it isn't seated, the assembly will rub against the axle shaft on the in-board side of the universal joint and cause heat. This heat travels thru the axle shaft to the hub which could cause seal or bearing failure.)

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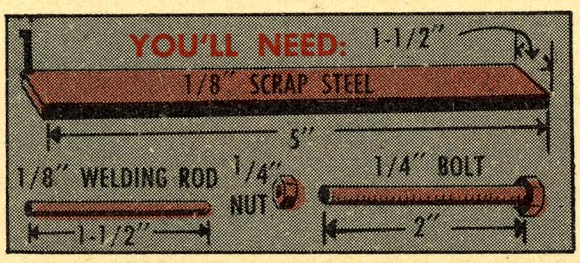
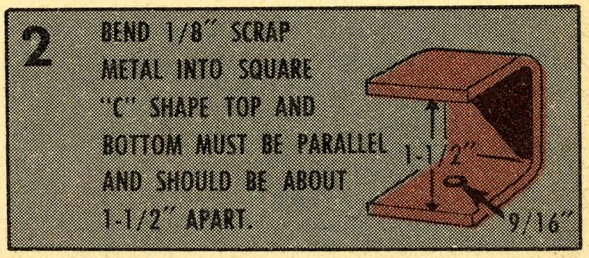
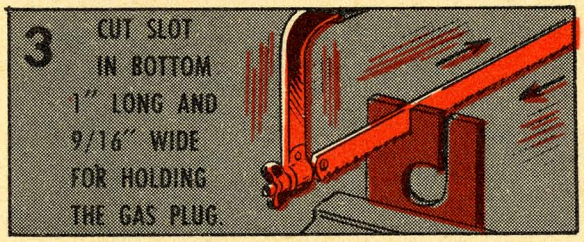
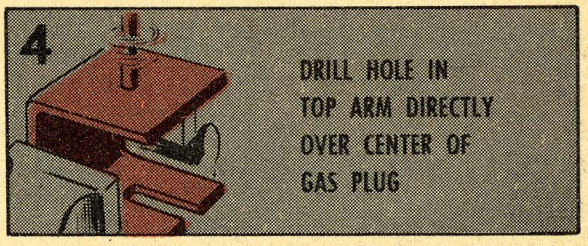
Dear Editor,

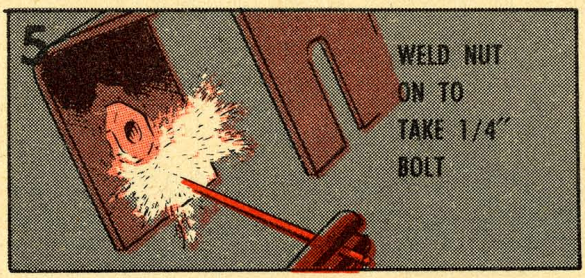
Thought I'd send along the idea for a tool I cooked up to help clean those tricky gas-cylinder lock-screws with valve-assemblies on the M1 rifles. It's quick and easy to make and does a darn good job. It can even be made smaller than the one here but I took the easy way out. I found it's easier to bend a big piece of metal than a small one.

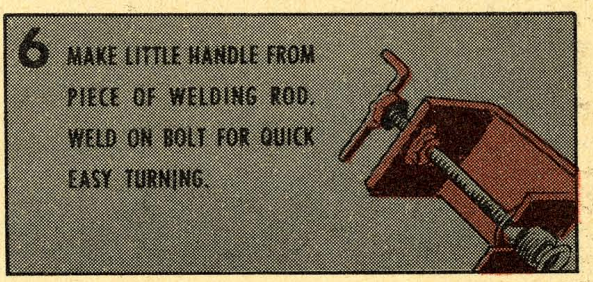






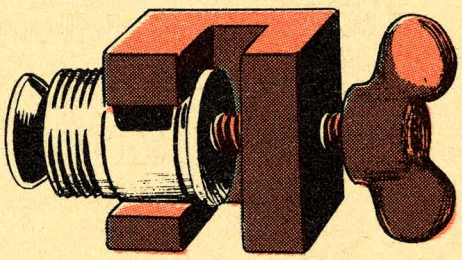






By turning the bolt you can hold open the valve assembly for cleaning and inspection.

PFC J. F. Albright
Sandia Base, New Mexico



(Ed Note—Man, now you're really cooking with that gas plug! That's the best trick yet for handling that valve assembly. Like you say, maybe it could be made smaller, if you had a machine shop handy.)

Dirty systems

A faulty hydraulic system on your M62 wrecker can be traced at times to gritty dust or dirt in the oil. If things aren't working right better not wait for the semi-annual oil change. Drain, flush and refill the hydraulic system and reservoir with OE or OES as prescribed by the LO. It'll add life to the pump, valves and rams and give you a crane that's a top performer.

M48 tension idlers

Your later model M48 tank'll have tension idler wheels (same as "compensating idlers" on the M47) between the drive sprocket and rear road wheel. They're not yet covered by the LO, but you'll find a grease fitting on the hub, bub. Make sure y'put the GAA to 'em at each "C" service.

Lubrication info

One of these days the M42 SP twin 40-mm vehicle may sport a cal. 50 machine gun instead of the cal. 30. But not now—so you can quit looking. Note 10 in Lubrication Order LO 9-7218 (30 March 54) was included in case you do get that cal. 50.

No gasket gluing!

If ya got a loose gasket on your tank's T25 periscope, forget about cementing it yourself. Turn your periscope in for a new one. MWO Ord F235-W18 gave the job of cementing to the depot people —so put nothin' on it. Ja' hear—nothin'.

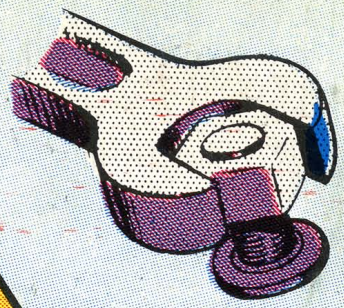
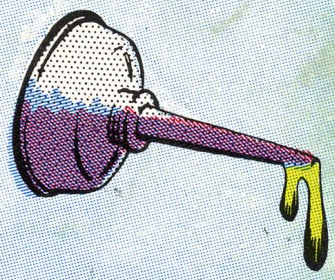
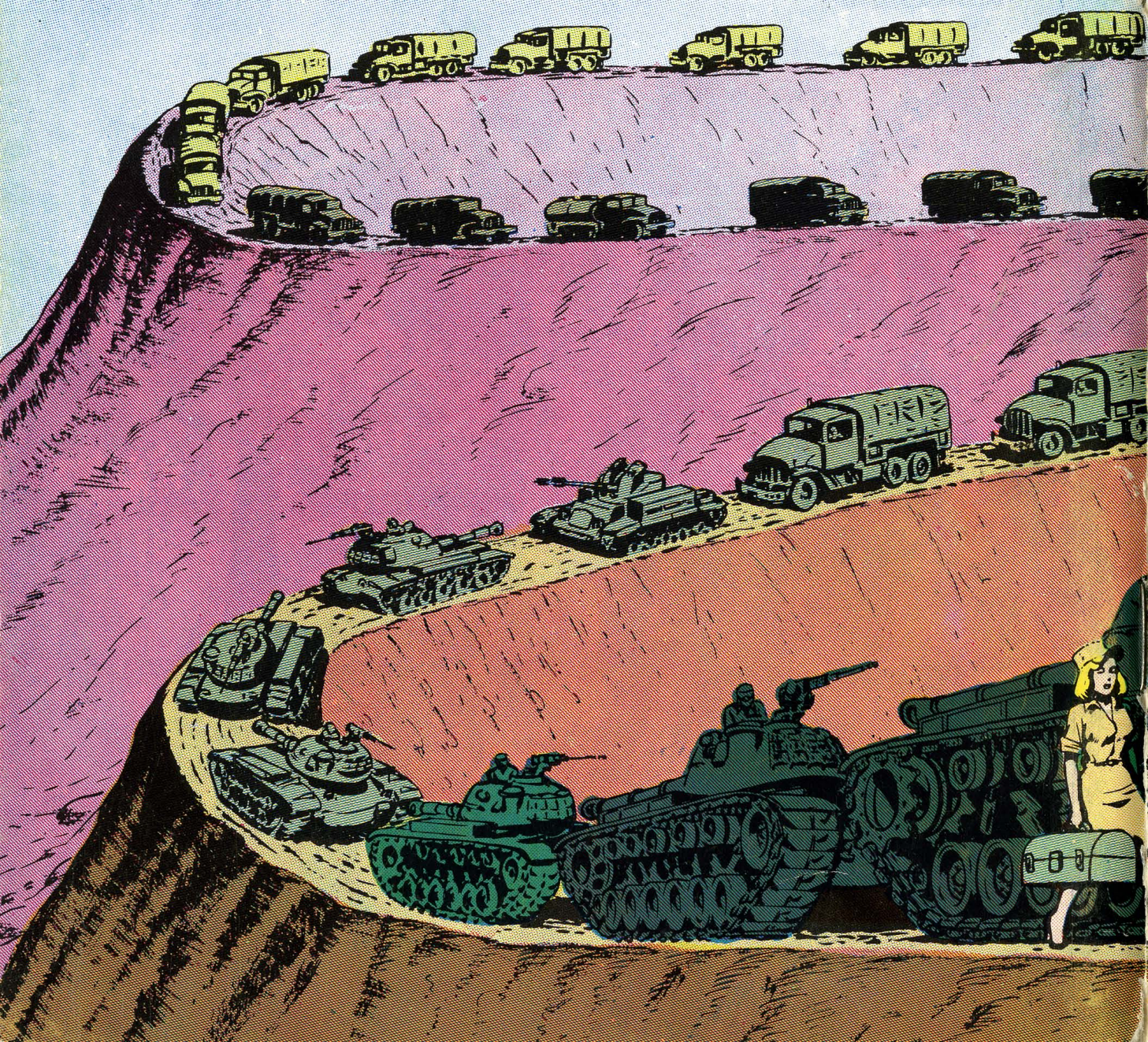
Check your fuze setters

Ask your Ordnance support if MWO Ord F293-W1 has been applied to your M22 and M23 fuze setters. If so—they're not to be used. MWO Ord F293-W1 is being canceled. It'll be superseded by MWO Ord F293-W2. Your Ordnance gang will let you know when they'll fix you up with the new MWO. Any setters not modified by W1 can be used and won't need the W2 modification.

Split gullet

Check your Jeep's filler neck where it's soldered to the fuel tank. The vehicle's vibrations sometimes crack the solder. With a split gullet your fuel system'll suck in air making your pressurized system null-and-void, and also leak gas into your Jeep's body, which is a fire hazard.

SOME OF THIS...



AND THE RIGHT AMOUNT OF THAT... IN THE RIGHT PLACES AND IN ACCORDANCE WITH YOUR TM AND LO WILL PREVENT THIS...